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HORTICULTURIST.

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Hints on Grape Culture.—XIV.

THE ground having been prepared, the vines selected and planted, and all preliminary operations performed, we will now give our attention to the care of the vineyard during the *first year* of its life. It is not necessary yet to say any thing in regard to the various systems of training advocated by different parties. All good systems that we have any knowledge of start from the same point, or, at least, should do so; it can make no difference, therefore, so far as this part of the subject is concerned, what system is adopted.

As the season of planting is at hand, we will say here briefly, in answer to inquiries, what we have already said in a former article, that a trellis should be about six feet high; that the rows should be six feet apart; that short-jointed kinds, such as the Delaware, Rebecca, &c., should be planted four feet apart in the rows, and long-jointed, rampant growing kinds, like the Concord, Union Village, &c., six feet apart. All who grow, or who intend to grow, grape vines, should read these articles from the beginning.

To return to the care of the vineyard during the first year. It is a very common practice, and as bad as it is common, to leave the vines to take care of themselves during the first year. To say nothing of the condition of mind which such negligence indicates, the vines suffer material injury in consequence, and in some instances die from this cause alone. We have reason to believe that this neglect, in many cases, is the result of a belief that the young vine needs no special care, and that proper attention would be given if it were thought to be necessary. This practice is very much like that indulged in by unfeeling parents when they think to make tender infants "tough and hardy" by exposing them half-clad to the winter's cold. In both cases physical laws are violated, and with nearly analogous

results: some pass through the ordeal, but, alas, how many do not. Let it be known, then, that the vine needs special care when it is young above all other times; that when just starting into life, as it were, it will bear neglect with less impunity than at any other stage of its existence. It is during the first years of the vine's life that it acquires constitutional vigor and sound condition; if at this time it becomes weakened or diseased, the chances of its recovery become very remote indeed. Let our readers ask themselves how many of their vines and trees have died from imperfect planting and neglect during the first few years of their existence. Many horticultural subjects that have died from these causes have had their dead bodies piled up before the nurseryman's door, as if there were not enough that might justly rise up in judgment against him.

The object, then, of the first year's operations in the vineyard should be, to obtain a vigorous, healthy growth; in other words, to secure *constitutional vigor and health*. This object is to be obtained by judicious culture and training. We here use the word culture in reference to the treatment of the *soil*, and the word training in reference to the treatment of the *vine;* generically, the word culture would cover the whole subject, but we propose to treat it in a twofold manner.

First, as to the treatment of the soil. A variety of opinions are in vogue in regard to the propriety of growing crops between the rows of vines in a young vineyard. Some recommend growing crops of various kinds; others, but a very small number, think that nothing should be grown. There can be no doubt that the vines, in the latter case, would be placed in the very best circumstances for securing the object in view, provided the soil were kept free from weeds and frequently stirred; but is it necessary that the wide space between the rows of vines should be wholly given over to idleness during two or three years? We think not. There are some kinds of plants that may be grown between the rows without injury to the vines during two years at least; there are cases in which plants may be grown between the rows with decided advantage; for there are persons who otherwise would not keep the soil sufficiently open and clean, and much less injury will accrue from a cultivated crop than from weeds. It must be understood that the cultivated crop is to be manured as usual, and not grown at the expense of the vines. The crop, also, whatever it may be, should not be grown so near the vines as to interfere with their roots; neither must their roots be injured or disturbed in the operation of hoeing. It must be carefully borne in mind, that the vines are to have the preference in every thing, and that no operation is to be performed which will interfere with or check their growth. It is a matter of no small importance, too, that the ground should not be trodden on more than is absolutely necessary for the indispensable operations of culture and training.

The question will now arise, What are the best crops to be grown between the rows of a vineyard? This may be answered by saying, in general terms, the usual hoed crops; yet corn is not admissible at all, neither is any crop that grows more than a foot or so in height, or that spreads much on the ground. Such crops

can not be grown without serious damage. No crop, again, that is earthed up should be grown; we therefore exclude potatoes, not only because they spread over much surface, but also because they are generally earthed up, though we never earth them. Carrots, beets, turnips, and similar crops, may be introduced, and a large yield secured. We have grown strawberries between the rows, and recommended others to do so. It is a profitable crop to be introduced in this way, where the soil is suitable for the growth of the strawberry. Three rows of strawberries, each plant a foot apart, may be planted between the rows of vines. At the end of the third year one row should be removed; and at the end of the fourth year another; and at the end of the fifth year it would be well to remove all. At that time, if not before, the vines will need all the space allotted to them. The strawberries should at no time be allowed to make runners, and the ground must be kept clean and free from weeds. There is an objection to strawberries, however, if the grape vines are to be covered during the winter, and earth is used for the purpose. Keeping in view the general principles we have laid down, each one can select for himself what kinds of crops, if any, he will grow between his vines.

But we have arrived at a stopping place without having said a word about training. That will be in season for our next. We will simply repeat here, that all the newly planted vines must be cut down to two or three buds, and the nearer these are to the base of the vine, the better. They must be cut down to at least a foot of the base, whether eyes are apparent or not. A vine that will not start below that is not worth having.

LANDSCAPE ADORNMENT.—No. XXII. FLOWER AND SHRUBBERY BEDS.

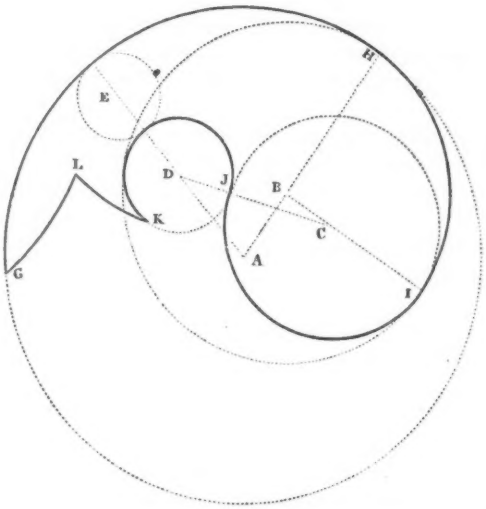
BY GEO. E. WOODWARD,

Civil and Landscape Engineer, 37 Park Row, New York.

The process of laying out circular and elliptical flower-beds is familiar to many, but the rules hitherto given for laying out irregular figures having curved boundary lines have been exceedingly troublesome, and, unless one is possessed of some ingenuity, are of but little value. The usual practice is to set out the curves by ordinates or perpendiculars from a straight line, these ordinates being either measured on a plan by a scale, or the length of each calculated, and involving more of a practical knowledge of mathematics than the method we propose to explain. It is quite necessary that all operations of this kind be made as simple as possible, and that the most beautiful and graceful forms be adopted, as they involve no more labor in laying them out than those of the most commonplace character. We can well imagine the ten-fold interest that gathers around the

pursuit of a higher range of art which, at even less expenditure of time and money, develops far more beautiful and attractive forms and combinations.

As all forms of the beautiful are bounded by strictly mathematical curves, it is proper that we should make use of the resources of mathematics in reproducing beautiful lines and forms, as they give the power to execute rapidly and with a certain result. In designing flower-beds we must exercise our taste in the combination of curve lines, so that the entire outline or form of the figure be agreeable; and although we are dealing with the most beautiful of all lines considered separately, it does not follow that a combination of them must necessarily be beautiful; but very beautiful forms can be made by any one who tastefully arranges them.



In the diagram we show all the auxiliary lines, the better to explain the principle. It will be observed that the figure is a combination of circular curves struck from different centers, and that the union of each is perfectly graceful, not the slightest abruptness or departure from a harmoniously flowing line. This is produced by the well-known system of drawing the curves so that they are tangent to, or touch each other; and in no other manner can two circular curves unite so that the point of meeting shall be absolutely graceful; the centers from which each curve is described and the point of contact must be in the same straight line.

As a matter of economy as well as gratification, it is better to study out the

design, and the manner in which it shall be executed, on paper. Thus, having decided on the figure shown in the diagram, from the point A, with a divider and to a scale, describe the arc G H. On the line from A to H must be the center of the next curve, which we fix at B; from B describe the arc H I. On the line B I must be the center of the next curve, which we fix at C, and from C as a center describe the arc I J. Now, if we examine the figure, it will be seen that the circle of which B is the center lies wholly within that of which A is the center, and touches it at one point only, at H; the circle of which C is the center lies wholly within that of which B is the center, and touches it only at the point I; and that the centers of each two curves that unite and their point of contact are in the some straight line, as A, B, H, and B, C, I. At the point J we reverse the curve, and to do so draw a line from C through J, and produce to D, the center of the next curve, and which must be in this line; from D, with a radius D J, describe the circle of which D is the center; at the point J this circle then touches or is tangent to the circle of which C is the center, and C, J, and D are in the same straight line. The curves K L and L G are struck from independent centers, and give variety to the figure. If desirable to inclose the whole figure with curved lines, connect the last curve made from the center D with the first one made from the center A by drawing a line from A through D, and producing it to the circumference of the circle of which A is the center; then bisect that part of the line between the circumference of which D is the center and that of which A is the center, and describe the circle of which E is the centre, which is tangent to both circles A and D. This would form a second figure, and leave a third cut off. A fourth and fifth figure can be made by cutting the original figure in two with part of the circumference of the circle of which B is the center, as shown by the heavy dotted lines; and a sixth figure would be left by removing from the original figure the circle of which C is the center. Thus, by this process, we can make six or more different figures, either one of which has a good form, and we may say that the design of most of them was purely accidental. This mode may be carried almost to infinity, and one could hardly fail to find on every trial a form which might be claimed as original. A half hour's trial with a ruler and dividers is sufficient to make any one an expert.

Having decided on the original design, all that is necessary is to transfer the centers A, B, C, D, and the initial point G, to the ground, and in the same relative positions as on the plan. They might be set out on a base line; thus, draw on the plan a straight line running between the five points named, and measure with a scale the perpendicular distance to each point, and from the same line on the ground set them out; then from A, with a radius A G, (which should be a metallic tape or chain to prevent stretching,) describe the curve G H; H being in line with A B, is easily found; then from B describe I H; I will be in line with C B, and so on. The centers should be preserved, so that at any time when grass grown, the verge can be cut clean and accurate in the same manner as practiced in beds

of single circles; an advantage that will be appreciated by those who have an artistic eye.

This process of joining curves of greater or less radius, or reversing them, is applicable to roads and walks, and is the only mode by which curves flow gracefully into each other, and any plan which does not embrace this principle is defective in artistic excellence. We do not mean to say that curves of long radii are struck from centers, but that curves of different radii, when so used, should be tangent to each other, whether laid out from centers or on the circumference. We do say that compound circular curves are practically identical with any curve that can possibly be made use of in any department of landscape adornment, and that there is no curve known, or gracefully flowing line, but what is rigidly mathematical. Will some one give us an example to the contrary?

[We can not help adding a word of commendation here. We regard this as one of the very best and most useful articles that Mr. Woodward has written on this subject; he has here made mathematics available to every body. The principle illustrated is simple, and we know it to be beautiful in its results, while it is capable of infinite diversity. The reader will do well to study it thoroughly.—Ed.]

PYRUMANIA.—No. I.

BY R. S. S., SUNNYSIDE, N. J.

Pyrumania, or the Pear Fever, is an endemic disease, affecting more violently the inhabitants of the rural districts, and chiefly those recently from city life.

This disease has several remarkable phases, and is very well understood by nurserymen, to whom, indeed, its appearance is about as welcome as an epidemic to young physicians, or a financial crisis to briefless lawyers.

The first stage or phase usually commences soon after taking up a residence in the country, and shows itself in a general admiration of fruit, in the sentiment that fruit is "a very nice thing to have in the country." Then half a dozen or a dozen very beautiful and thrifty pear trees are bought, all in fruiting condition, that is to say, with fruit-buds on them, and faultless in shape and proportion. These trees, because they are *specimen trees*, the nurseryman very reluctantly, yet out of distinguished consideration for the purchaser, very obligingly agrees to part with, (how kind in him!) And so they are bought at a big price. We say nothing here about the other fruits gone into, because it is not necessarily a part of the present thesis. We might, indeed, extend the investigation into kindred affections, such as the *Vitifermania*, or Grape Fever, which prevails very extensively in certain localities, and is extremely fatal to plethoric purses. But our present investigation is solely as to the specific morbosity which forms the caption of this

article. To go back again to the point of our digression, namely, those pet Pear trees. Most carefully are they tended; every branch is shortened and directed *secundum artem*, either in the true standard or the pyramidal form, the espalier or the pyramide Fanon, or en colonne, or en vase, or a la forme, any thing else which the symptoms of the case may suggest; then the first appearance of fruit is watched; and when finally the first respectable Pear, *a* Pear, is realized, then the patient may be said to be actually infected: a kind of ecstasy supervenes which soon develops

Phase No. II. The patient now discovers that his genius is too cramped; that he wants a larger field for the exercise of his taste, and putting into use the immense amount of pomological lore which he has acquired during the past year, from the careful study of a whole shelf full of works on scientific agriculture and pomology. The yearning now is for several acres of trees, and at least one hundred varieties. The symptoms now indicate propensities over which the patient has no control. The passion must be gratified. Those three thousand trees must be planted during the coming season, and there is no time to be lost. So nursery catalogues are suddenly in great request, and assorted lists are prepared; munificent orders are given to the nursery, and the mind becomes filled with gorgeous visions of mountains of pears, and golden prospects of prolific market returns. In most cases a piece of ground is taken without any previous course of preparation, either mechanical or chemical, exhausted, perhaps, before it came into the present proprietor's hands, of every element of fertility necessary for the success of the enterprise; but no matter, there is no time for this inquiry, and if a doubt arises, why all that can be remedied *after* planting. So the *holes* are dug, and the trees are planted in magnificent rows, looking almost as imposing as a brigade of infantry ployed in "column at half distance," and the work is achieved. The patient now experiences a sensible relief; the fever has in a measure abated. This phase is a very dangerous one in the disease, and most generally terminates in

Phase No. III, or the Reactionary Phase.—The symptoms attending this phase are almost as numerous as the different circumstances of the case, and the variety of constitutional idiocracy of the patient. The most usual phenomena of this phase are such as these: First. At the close of the first season after planting a discovery is made (if in the fall) that quite a number of trees, the most promising in appearance when first set out, suddenly "went in" when in full leaf, and now present all the appearance as if some enemy had brought fire to them. And again, (if in the spring,) when all the orchard is putting forth leaf and blossom, there are a number of trees that won't do either; the bark exhibits great patches here and there which, instead of being of a healthy green or brown color, are as black as your hat or Barnum's cherry colored cat. Such things cause gaps in the ranks, but they are carefully closed up, the dead are carried out, and recruits are brought in to fill their places. Second. Things go on pretty much thus and so, with considerable of the so, until the trees begin to fruit; then all of a sud-

den a number of the dwarf trees, which are loaded with fruit just set, put on an extraordinary appearance; the fruit wilts, turns black, and drops off; the leaves, too, wither and dry up, and these trees are "gone in." The borer has got hold of 'em. And now, Thirdly. The orchard has been planted some five years, and so far there has not been fruit enough to pay the interest on the cost of the trees. The varieties selected are many of them worthless. The winter varieties have chiefly proved to be stones when they were gathered, and remained so until late in the season, when they—ripened? No; shrivelled up and rotted. Some of the varieties have become extinct, giving nary a pear to show what they were. Of the original number of trees planted, there is now a woeful deficiency, about the same proportion is left as there usually is on the restoration to peace of the men who enlisted at the beginning of a war. The care of the orchard, too, has become tremendously expensive. It is either a tough sod, or it has to be plowed again and again during the season to keep the weeds down; and at each plowing the trees are shockingly mutilated.

The patient now begins to look over old nursery bills and memoranda of cash paid out for labor, fertilizers, etc., etc., and now the reaction has fully set in. All those golden visions of the outset have turned out to be but baseless fabrics, and the patient, counting the cost, comes to himself with a sigh, and confesses "The hobby is over."

This thesis does not pretend to more than an investigation of the disease and phenomena attending it. The writer has brought to bear considerable experience of his neighbors, and not a little of his own. His positions may therefore safely be relied upon as in the main correct. He has had the advantage of the daily observation of the case of a very near and dear friend, who had been a patient himself, and whose case no one can understand half so well as the writer.

As the usual season of attack is approaching, a further treatise on the proper treatment of those infected would be eminently in place, as it would give instructions how to ameliorate the violence of the attack, guard against bad symptoms, and particularly prevent the disease degenerating into the third or reactionary phase.

[The above was intended for our March number, and put in type for that purpose, but at the last moment a necessity arose for omitting it, which we do not now regret, since on reading Nos. I. and II. in connection, the reader can not fail to comprehend the scope and design of No. I., which he most likely would not have done on reading No. I. alone, and consequently have lost the enjoyment of its humor. This manner of treating a subject presents a tempting opportunity for fine writing, as we here see, but it is very apt to invite criticism. We turn with pleasure to No. II., where, in view of the genial and intelligent manner in which the subject is treated, we may say we have the Pyru—mania, the *minus* mark constituting just the difference. We should have made up a slightly differ-

ent list of Pears, though those named are very good. The reader will bear in mind what we have repeatedly said about deep planting. We have seen nothing to change our mind on that point. We are so much pleased with No. II., that we shall be glad to have R. S. S. continue the subject, and include in a future number some special directions for pruning.—Ed.]

PYRUMANIA.—No. II.

BY R. S. S.

Gentle reader, whoever thou art, whether of the honorable craft of nurserymen, or a plain amateur, be not ireful. If of the latter class, methinks I hear you say, "A true bill." Doubtless such is the honest confession of many who have been through the mill; and beyond peradventure the question is asked by more, "Is there no such thing as success?" Ah! now we are coming to the point. *Is there no such thing as success?* In what? Why, in cultivating the pear with remunerative returns for our labor. We answer, Most certainly there is, else how is it that our markets are supplied with fine table pears to the extent they are? (not, we confess, to the extent they ought to be.) Do not, then, suppose that in our previous article we mean to discourage amateurs from all attempts to grow this fine fruit for a market—*tout au contraire*—we meant in a playful way to hit off the ill-directed and inconsiderate labor of the too enthusiastic amateur. And we are specially drawn to this explanation through a secret misgiving lest the animus of No. I. may not be properly understood. It is much to be lamented that in so many cases the liberal outlay and labor of the amateur results in failure. But for every such case there is most assuredly a very good reason. The first and main cause of all failure is *too much haste*. We mean thereby an over anxiety to arrive at results. From this it happens that all the conditions necessary to insure success are overlooked; and these wanting, there can be but one result. failure. We say, then, to the amateur, don't be in too great haste to make a pear orchard—*festina lente*—remember Rome was not built in a day. In the first place, ascertain whether, all things considered, climate and soil, your *locality* is favorable to the pear. If this question is answered negatively, then our advice is, touch lightly; have but a few as special pets in your garden, as it were to show how far natural disadvantages may be overcome by art and science. If, on the other hand, you find, by observation and the experience of your neighbors, that the pear will thrive, then lay out your plans as largely as you please, but go to work judgmatically and considerately. Choose first your site; let it be say half an acre; better begin with a small piece than with a large one. Commence with

The Preparation of the Ground.—The first thing to be done is a thorough

mechanical preparation. Some begin this by cropping the ground, such as putting in a crop of potatoes to clean the ground. This we consider an absurdity, arising from the servile following of the untaught practice of our fathers, instead of profiting by their experience. The potato is essentially a potash plant, and one crop will rob the ground of a vital element for the pear to an extent which will take years to replace in the same form. We rather recommend repeated plowing and leaving fallow. Plow deeply—subsoil. If the ground is inclined to be moist, then attend to a thorough underdraining; let this work be done as if for all time. It need be done but *once*, and that should be in such a way as never to necessitate a repetition. If the whole ground could be trenched instead of subsoiling, the extra amount of labor would be fully compensated for in the long run. We well know the great labor of trenching, and we are therefore careful to insert an *if*. We would at any rate recommend trenching a portion of the ground in order to test the question. By way of cleaning the ground, we have found it an excellent practice on the first plowing to give a very liberal seeding of buckwheat, which, when it comes up, should cover every inch of the soil, and be plowed in again when *in flower*. This will be equivalent to many loads of barn-yard manure without its cost, and with the advantage of leaving the ground free and clean of all weed seeds. The process thus recommended may extend through the summer, and bring us up to the season of planting in the autumn, which, for many reasons, we consider the best.

The Plantation.—The ground being thus prepared, we come to the preparation of the borders. The question now is, What do you mean to plant, standards, or dwarfs, or both? If dwarfs alone, you may place them as close as ten feet apart each way, which will give you four hundred and thirty to the acre. If both dwarf and standard, then we would recommend twelve feet by twelve every way; the first row to contain a standard, then a dwarf, next a standard, and so on in alternation; the second row to contain only dwarfs, and the third in alternation the same as the first, and thus until the standards are all planted. This will give twenty-four feet between every standard, which, when they in course of time shall have become good sized trees, and the dwarfs between them, effete by age, are dug up, will leave the standards just ample space, and no more. This distance will give three hundred and twenty-five trees to the acre.

Now let the holes, or, more properly speaking, the borders, be staked out, and this will call into play a little amateur engineering. To do the thing accurately requires no little skill, but every intelligent amateur can by the use of the sighting rods and some care manage to stake the holes in line, every way, lengthwise and breadthwise. We recommend this form of laying out in preference to any other on account of the facility of working between the rows. In digging these borders we would lay more stress upon the diameter than the depth. The ground having been prepared as above directed, it will be sufficient to dig the borders three feet wide by twenty inches in depth, throwing the top soil into one heap and the sub-

soil into another. All now is ready for the trees, and the next question is, How many and what varieties are you going to buy? Here we would insinuate a caution, to wit: do not fall into the common error of running on too great a variety. If, as this article presupposes, the plantation is the beginning of the amateur's experience, it would be advisable to keep within a few of the best known and most popular varieties. For a half acre, or one hundred and sixty-two trees, we would suggest as follows:

Standards.—Seckel, Bartlett, Fondante d'Automne, Henry IV., Flemish Beauty, Beurré Bosc, Winter Nelis (largely.)

Dwarfs.—Duchesse d'Angoulême (largely,) Glout Morceau, Bartlett (very fine as dwarf,) Howell, Bergamot d'Esperin.

We have named but a dozen varieties, and these are all first rate. We have omitted the early summer pears, because we do not consider them worthy of a place in the orchard; and also the late winter varieties, as being impracticable for any but an old and experienced grower, who has advantages for ripening with better success than we have ever enjoyed. We might add a number more very fine varieties, but we have named this list only by way of suggestion.

The usual course is to buy these trees at the nearest nursery. This is a good rule, for, as a general thing, the nearer the nursery the surer the success in transplanting. But a very important question here arises, Is your locality one much or at all infested with the borer? If so, either send for your trees to any distance where the borer is unknown, or else go to the nursery yourself, and see every tree taken up, scrutinize closely the roots, and condemn every tree the borer has touched; for otherwise you may stock your orchard with this pest to pear growers. We would recommend trees from two to three years old; nothing, however, under two years. As to buying older trees because they have fruit buds, we deem it unadvisable except for a few specimen trees. In getting trees from a distance there is frequently great damage done, which the inexperienced amateur will not discover until a year or two after planting; that is to say, in the handling and packing many buds get rubbed off, and trees which have been selected for their symmetrical beauty, and for which perhaps an extra price has been paid, become the most intractable and unsightly in the orchard. On this point we speak feelingly.

We do not think much of amateurs raising their own trees. We believe in the maxim, "*ne sutor ultra crepidam*," and think this better left with those to whom it belongs—the nurserymen. But we would recommend the purchasing of trees of one year old from the bud, and planting them in a nursery at double the distance in which they before stood, there to remain as a reserve for future use. This may be done at comparatively small cost, and will afford the highest means for pruning and shaping for any desired mode of training.

And now, as to the setting or planting the trees in their borders as above prepared, we would remark that here, too, haste should be avoided. Let your

stock of trees, when received from the nursery, be carefully heeled in by the roots in or near the orchard, and then proceed leisurely and carefully to the planting.

Process of Planting.—The holes being dug as above described, proceed to slope off the edges all around, throwing the soil into the bottom of the hole; this will increase the diameter at the top nearly double, without involving any extra labor. Now mix some of the subsoil with the soil, and throw in, drawing the mass up into a cone, so that when you set the tree in, it will be a little deeper than when in the nursery, observing with the dwarfs to bury entirely the parent stock. Now with great care draw out all the roots and rootlets, so that they will remain as nearly as possible in their natural position; then carefully sift in the fine top soil, and with the hand work it in so as to fill all the spaces between the fibrous roots. To do this well requires two persons, one to hold the tree and adjust the roots, and the other to fill in the soil. Some persons make a practice of drawing up the tree when partially planted, and shaking it, thinking thereby the better to work the soil into the cavities; this practice can not be too severely condemned, as it tends to break off or injure the fibrous roots. When the roots are all covered, fill in the remaining subsoil, levelling the same on the top of the border.

It will be remarked that we have said not one word about manure, nor do we mean to say more than this: keep it away; do not for the present apply any; it will be time enough a year hence. Now we have told the whole secret and the conditions of success. It seems no great mystery either, but, as we have said before, the great cause of failure is in the neglect of some or all of these conditions. It simply resolves itself into these two elements—thorough preparation of the ground, and careful manipulation. We have known the first carried out so far as to haul extra soil on the ground to deepen the soil of the plantation. Wherever the means of the amateur will justify such an expense of labor, it will, no doubt, pay a handsome interest; this is a point, however, on which we will not enlarge, but close this already too protracted essay with the axiom, which, true in every thing else, is surely so in pear-growing, viz.: that it is far better to do a little well than much badly. We leave the application to the amateur.

PRACTICAL RESULTS IN GRAPE CULTURE.

BY HENRY WILLIAM MURDFELT, NEWBURGH, N. Y.

Having no new theory to advocate, or any disposition to attack the opinions of others, I merely propose, in a short article, to give you an account of my own mode of raising grapes, which you are at liberty to make known to your readers if you deem it of sufficient value. A liberal interchange of ideas among cultivators can not harm any one, and may do much good. I confess to having received my pay in advance for all the information which I am about to impart.

My vineyard is situated on the west side of the Hudson River, sloping to the southeast. The land is a yellow clay loam, with plenty of stone of every size, from a man's fist to boulders of many tons' weight; it is what is termed *hard land*, and not inappropriately named: better for building sites than for cultivation. My beginning was under discouraging circumstances, which it is not necessary to state. I set out my first hundred Catawba vines seven years ago, without any extra preparation of the soil. The ground was plowed as for a crop of corn, the holes were dug, and the vines set ten feet apart in rows twelve feet asunder; the spaces between planted with potatoes. The vines were otherwise neglected for three years; they were then pruned and trained to the trellis, and rows of strawberries set between the rows of grapes. From that time to the present the two kinds of fruit have been cultivated, the weeds kept down, and the ground frequently stirred. No manure of any kind was used until 1859, when a sprinkling of bone dust of about six quarts to every square rod of ground was sown broadcast, and has been repeated every year since. These vines in due time began to bear; the first crop was purposely small, and was consumed near home, though a small portion of the fruit was sold for eighteen cents a pound. In 1858 I sold to the amount of one hundred and sixty dollars. The following year to the same amount, besides using all that my family needed and making some wine. The year 1860 but few grapes ripened any where. My sales were but little in excess of the two former years, and in 1861, owing to the unripened canes of 1860, I had not over a quarter of a crop. Observing a tendency in the long arms to generate strong shoots at the extreme ends, I headed in the five feet arms, to three feet, in the spring of this year, and thus produced strong canes near the stem of the vine, where most needed for the coming years; but with these disadvantages, it will be seen that the product was about equal to the other seasons, though it should have been double or more. Any grape planter can readily estimate what may be expected from these vines under good treatment in future years.

Profiting by experience, in the spring of 1858 I prepared the ground for one hundred more Catawba vines; plowed the ground thoroughly, and picked off and removed large quantities of stone; dug trenches three feet wide and twenty-six inches deep, continuing the rows twelve feet apart; laid the top soil on one side and the subsoil on the other; filled in about two inches of small stone, upon which were placed dry corn stalks to keep the ground loose, and on this returned the top soil. This left the trench about eighteen inches deep; the roots, which were good strong layers of Catawba, were then carefully placed, and covered with about six inches of the subsoil, leaving the trench ten to twelve inches deep after planting the vines, and remained so until the fall of the same year, when the ground was plowed and harrowed to a level. It was then planted with strawberries between the rows, and the grape growth cut down to one bud. In 1859 the ground was kept well stirred and free of weeds, still cultivating strawberries, and using no manure of any kind. The growth of this season was cut down to three buds.

In 1860 there was a small show of fruit on many of the vines. Kept the weeds out and stirred the ground often. In the fall removed the ground around each plant, and cut away all surface roots to the depth of eight inches; filled in again, and put on a dressing of six wheelbarrows of top soil to one of hen manure, well mixed, spread over the surface, but not within two feet of the stem of any vine. This was the first manuring. In 1861 I gathered the fruit from four vines, and weighed each separately; the average product was nineteen lbs., and not an inferior cluster among them. The whole hundred vines averaged fifteen pounds, which was sold, together with the product of the original hundred vines, at twelve to sixteen cents per pound. Some sales were made at twenty cents; these are the New York wholesale prices; and the crop marketed was twenty-five hundred pounds. In addition to this, we reserved a liberal supply for family use up to Christmas; gladdened the hearts of many friends with baskets of fruit, and made a barrel of choice Catawba wine, all from two hundred vines. I shall discontinue the cultivation of strawberries or vegetables between the rows, and in their place will set a row of vines, so as to have my rows six feet apart instead of twelve, and then use the cultivator and hoe to keep the ground clean and mellow. I have increased my vineyard to three acres, a part of which is Delaware, though I am quite well satisfied with the Catawbas.

My training is on the renewal system. I raise three canes, two of which, forming the arms or side canes, are tied to the lower wire; the middle one extends upright, and is pinched in at the top of the trellis. Eight feet apart for the vines is better than ten. I pinch the fruit-bearing shoots two leaves beyond the fruit, and do not disturb the laterals. I always remove the secondary shoots, and allow not more than three bunches of fruit to grow an any one shoot. If much fruit is grown, I reduce the clusters on each shoot, endeavoring to avoid all extremes in pruning. My vines have never been covered or protected in winter, and don't seem to need it. The thermometer has frequently been as low as fifty-four degrees below freezing point.

[There are so very few who, in making a vineyard, keep an account of the expense, or are able to tell how many pounds they have raised on a given number of vines, that our readers interested in grape culture will consider themselves under obligations to Mr. Murdfelt for his important facts and figures. Even on his own showing the results might have been larger; yet they have been such as would satisfy most men under like circumstances. We shall present statements, from other reliable parties, all going to show that native grapes may be grown with profit; a fact in regard to which we never entertained a doubt. All will not succeed alike, owing to various causes, and some few may even fail altogether, but the great fact will still remain.—Ed.]

FRUIT IN THE NORTHWEST.

BY O. S. WILLEY, MADISON, WIS.

The Northwest sustains so close a connection with the Eastern clime and nurseries, that a word may not be amiss referring to errors committed in this part by the otherwise well-meaning tree growers, who have been so largely patronized heretofore by this section of the country. Our soil is very varied, and exposures of every description have to be contended with: from the lightest sand, through the various degrees of limestone formations to the heaviest clay; and exposures from the warmest sunny valleys, to the bleakest *northern hill tops*. A list of sorts adapted to the one would be an almost total failure in or upon the other, either as regards soil or position. The indiscriminate manner in which trees have been sent out by nurserymen, adapted to different soils, have led to much disappointment and dissatisfaction, upon the supposition that all trees will thrive upon the limestone formation (geologically) found in the southern portion of the State, extending as far north as La Cross, and the central portion of Columbia Co.; the reverse might, and probably would be true north of this, known as the sand region. Then, interspersed over both, is the clay tract, principally north of Racine, though its presence is quite visible most of the way upon the Lake Shore, and in limited districts throughout the State.

We wish to draw the attention of our Eastern brethren to this diversity of soil and the necessity of seeing to the adaptability of sorts, not only for their, but our mutual good. The winters of '56 and '57 taught the West a valuable, though expensive lesson, which in some sections and isolated cases of sorts yet lingering, is still bringing forth its fruits of wisdom in burying the Rhode Island Greening, Baldwin, Esopus Spitzenburgh, Swaar, Early Harvest, Rambo, Fall Pippin, &c.; but in some cases even these (the tenderest sorts sent out from the East) have produced fine specimens. But the location must be the best, viz., a limestone formation, upon high ground, well drained, and cool aspect; northern or western to be preferred. The

1. *Red Astrachan* is known every where, and succeeds well.

2. *Wine Sap*, Fall and Winter, are gaining many friends, being in some instances the only sorts remaining of an eastern purchase. More are always wanted.

3. *Sweet Wine* is very hardy; an upright, strong grower, with age bears well. Medium size, round, dull red, on greenish yellow; flesh white, tender; valuable for cooking or stock; too sweet for eating. In use through the winter. This is superseding in many cases the

4. *Talman Sweet*, which is also an abundant bearer; indeed, after obtaining age, will nearly bear itself to death in a "grass orchard." Requires constant feeding and cultivation to sustain its vigor. Both of the last two sorts are being planted extensively.

5. *Duchess of Oldenburgh* and

6. *Fameuse*, or *Snow*, upon rich soils and the limestone regions, succeed admirably; especially so in the western portion of Dane and all of Sauk Co., where the locations are high and well drained.

7. *Sops of Wine*,

8. *St. Lawrence*,

9. *Autumn Strawberry*,

10. *Bailey Sweet*,

11. *Westfield Seek-no-further*,

12. *Pomme Grise*,

13. *Raule's Janet*,

14. *Red Romanite*, (*or Gilpin of Downing*),

15. *English Golden Russet*, are all adapted to this same latitude, or similar exposure and soil. A portion of them will succeed reasonably well in less favored locations; as Nos. 1, 3, 4, 7, 8, 14, 15 or are better adapted for level prairie planting (when ridged with the plow) than the others mentioned.

16. *Perry Russet* is a sort sent from the east under various cognomens, as Winter Russet, Poughkeepsie Russet, Golden Russet, &c. It is universally hardy, succeeding in all locations, and much esteemed every where. Tree good grower, forms a round even head; fruit large, fair, and excellent; keeps well through the winter. Too many can not be had, as it is the best of all the Russets.

17. *Colvert*, esteemed for its hardiness, is coming into favor; a rapid grower, and makes a beautiful orchard tree, productive. Fruit large, yellowish; rather coarse, sub-acid; in season September to October.

18. *Cider* (not Smith's) is another of the same class, succeeding upon well-drained locations, and promises to be very successful upon our rich western soils. Tree very hardy and vigorous; upright, spreading. Fruit oval, medium size, striped, white-fleshed, excellent for kitchen or dessert. Season September to January.

19. *Northern Spy*, so much esteemed now at the East, is fast gaining ground here. Fine crops of it have been raised the past season ('61.) Its characteristic of late blooming will endear it to many frosty locations. Tree very thrifty, vigorous grower, requires well drained soil and cool aspect, else it is subject to sap blight. Fruit is so showy, tender, juicy and sprightly that it is a universal favorite.

20. *Yellow Bellflower* is rather fickle, and quite as impatient of water as any sort named. Upon well-drained soils it succeeds, though very tardy in bearing. A rapid grower, forming a large round head in the orchard, but its impatience of water, if near the surface, will greatly retard its popularity.

Thus we have briefly described a few of our leading sorts, alluding to some of their characteristics in soil and habits, enough, perhaps, to illustrate the position we wished to set forth, viz., the benefit to the West at least, if those of the East who *would* supply us with the good and beautiful, would give the subject of soil, aspect, and varieties a little more serious thought. It would prove to our benefit and

their credit. This same idea is as applicable to Pears and Cherries as to the Apple; and though we have now occupied twice the space we first intended, we have not yet approached, with the last named, the "beginning of the end."

[We confess to not having given sufficient attention to general fruit culture in the West, especially in the more newly formed states. We have a large number of readers there who are well-nigh starving for information; and we thank Mr. Willey, not only for his article, but for the opportunity of saying to our readers there, that in good time we shall specially attend to all their wants. This should not prevent Mr. Willey, however, from letting us see the "end" of his "beginning." —Ed.]

ROOM PLANTS.

BY ANDREW BRIDGEMAN, NEW YORK.

There are few persons, we apprehend, but what find pleasure in the presence of plants and flowers, and would desire to cultivate them in their dwellings during the long winter months, if any method could be devised by which it could be done successfully.

We might propose the construction of an additional room to the house, but separate from it, with glass roof, and heated by the most approved method, but that is not the purpose of this article; its object is rather to suggest means of transforming the atmosphere of a room, so that plants may grow and bloom, if not as perfectly as in a separate apartment, yet sufficiently well to gratify many who have a passionate love for them, but who now experience as much sorrow as pleasure by their efforts at cultivation.

Before the introduction of gas and the modern heating appliances to private dwellings, it was the privilege of most of the residents of cities to have their stand of plants, and in many instances they grew and bloomed them quite as successfully as in a greenhouse. We remember only a few years since of having a table of plants in a room warmed by what was then called a drum, connected with the kitchen stove below; on the drum was an evaporating pan, always supplied with water. The plants did not have the benefit of the sun until after 2 o'clock P. M.; yet, notwithstanding this, they grew and flowered extremely well; the Hyacinths, in particular, were among the best we have ever seen. Changes, which are not all improvements, (though so called,) in the construction of dwellings and methods of heating and lighting, have rendered equal success almost impracticable, and the remedies we suggest may only be attended with partial success; nevertheless, we offer them with the hope that some at least may adopt them, and receive additional pleasure thereby.

We will not occupy your space by a disquisition on the properties of air, and

the effect produced upon it by combustion, respiration, &c., but will assume the position that the atmosphere of a room, under such circumstances, is partially deprived of its oxygen, and almost wholly destitute of moisture, and proceed from thence to notice the remedies as applicable to plants, believing, at the same time, that a condition of atmosphere congenial to them will be the best adapted to wholesome respiration, and conducive to the health of persons confined therein.

In the first place we remark, that when heat is generated within the room by a stove, or any other means, water should be placed in such position as to secure the greatest amount of evaporation. When the building is heated by hot-air furnaces, and conducted to the different apartments by metal or clay pipes, every register opening into the rooms should be furnished with an evaporator of sufficient size to hold the greatest amount of water that can be infused into the atmosphere by the most approved means during 24 hours; if the evaporator becomes dry, the odor arising from the scorching of the sediment will be any thing but agreeable.

Our first experiment was made with four zinc pans inclosed in one frame to fit the opening in the floor, and each pan connected with the other by a small tube, so that by pouring water into one of them, all became equally full. The spaces between the pans were for the admission of the heated air, being large in the center and diminishing towards the ends, so that the air passing through would with more certainty be infused with the watery vapor arising from the pans. This first experiment showed that four quarts of water could be entirely evaporated within 24 hours from one register by filling it twice a day. A larger and deeper set of pans might be constructed, so as to extend from beneath the flaps of the register to the ceiling below, containing a greater amount of water, and producing an increased amount of vapor, besides requiring less attention. To upright registers, *i. e.*, registers in the sides of the room, an evaporating instrument can be the more successfully applied, because they may be extended any distance down the conductor; but in cases where the conductor approaches the room horizontally it will be necessary to arrange the pans one above the other, always keeping in mind that the larger the extent of surface exposed to the action of heat, the greater the quantity of moisture eliminated.

The stand or table for plants should be made as high as the window sill, long enough to occupy the window recess, and narrow or wide, according to the number of plants to be accommodated. The top of the stand should be bordered round at least two inches in height, and lined with zinc or copper, so as to make it perfectly water tight; the tops of the table thus formed to have a coating of leaf-mould, sand, and loam, and covered with rock-moss leveled up to the rim of the table, the whole to be thoroughly saturated with moisture, and always kept so.

Before placing the plants on the table, inclose each pot in one a size larger. It will not be necessary to fill the space between the pots with soil, but only top-dress them with ordinary compost. The use of beach sand as a top dressing is often practiced, but is objectionable, because it forms no union with the soil in the pot, and consequently gives no indication of its condition.

After having thus prepared the plants, place them on a stand with a saucer under each suited to the size of the pot. The plants can be arranged to suit the taste of the parties; a good method, however, is to dispose of the larger plants so as to show well from all sides, the smaller plants to be placed under and between the larger ones, presenting the appearance of woods and undergrowth, as it exists in nature. Ferns, Lycopodiums, and other plants requiring much moisture, may be planted in the soil on the table among the moss.

The double pot is recommended, because, while many of the roots of plants seek the interior to draw nourishment from the soil in solution, others equally important seek the inner surface of the pot to draw nutriment from the atmosphere; if the pot should become sufficiently dry through the heat of the room to wither and close the fibres or capillary tubes within the pot, the nourishment derived from this source would be excluded, and the plants must suffer in consequence. By the use of the double pot the air between, or passing through them, would be better adapted to nourish the plant. A saucer to each pot is proposed, not that it should receive the drainage from excessive watering and hold it for future absorption, but to protect the roots of the plants contained in the inner pot from too much moisture, which might occur if the plant was set down and became imbedded in the wet moss and water on the stand; it would do no harm, however, if a little water did stand in each saucer, as the inner pot containing the roots would be elevated by the outer pot to beyond the reach of injury by excess of moisture, and the water in the saucer would be absorbed by the outer pot and distributed to the atmosphere.

The same principle of the double pot may be applied to the treatment of plants during the summer months, and for a similar purpose. The direct rays of the sun on the outer surface of a flower pot causes much the same injury to the roots of a plant as the dry atmosphere of a room would occasion, and the same injurious results would follow; hence it is that florists, after repotting their green-house plants in the spring, plunge the pots up to the rim in soil or coal ashes. Coal ashes is preferred for this purpose, because it will not harbor worms, which enter from the ordinary soil into the opening in the bottom of the pot, and change the whole character of the earth.

We may safely conclude that every appliance that can be employed that will successfully infuse the atmosphere with moisture can not do otherwise than benefit the air to the advantage of plants, as well as furnish healthy respiration to the human lungs, and this condition of air it should be our study to create in every dwelling.

Considerable discrimination should be exercised in the watering of plants; every plant should be supplied with enough water at one time to last it for a day at least. Some plants will absorb a much larger quantity of moisture than others; a quantity of water that would sustain one plant a week, may be absorbed by another plant in a single day. The quantity that each will require may easily be ascertained by observation.

All plants kept in rooms and exposed to a dry atmosphere would be benefited by syringing or watering overhead once every day. A convenient and simple appliance may be constructed with little expense, to protect the carpet and curtains of the room from injury by sprinkling, and that is, to have a frame made to extend a foot or more above the tops of the plants and the length of the stand, two other frames of the same height and the width of the stand, and hinged together so as to fit within the border around the top, the three frames, after being hinged, to be covered with muslin, and well coated with a mixture of raw and boiled linseed oil; this screen may also be used to protect the plants from the draught of the window during cold nights, and thus avoid the necessity of shifting the stand into the middle of the room. In ventilating care should be taken not to expose the plants to a strong current of air, even though the temperature should be moderately warm; it would be better to allow the air to waft gently upon them. If the weather be cold, air should be admitted by lowering the upper sash, which should be kept open as long as the safety of the plants will permit; on the approach of night all means of ventilation should be closed. The average temperature to be maintained should not be over sixty during the day, or lower than forty during the night; a few degrees higher or lower could do no injury, provided the two extreme temperatures of day and night did not vary more than twenty degrees.

[Mr. Bridgeman's article will be found worthy of a careful perusal by all who grow plants in rooms, or who propose doing so. Too much stress can not be laid on the point of furnishing moisture to the atmosphere. The evaporating pans suggested by Mr. Bridgeman will be found an important means of effecting this purpose. If, in using saucers under the pots, water is found to accumulate in them, (which is not likely to be the case with double pots,) the purpose for which they are used will be fully accomplished by inverting them.—Ed.]

FRUIT TREE PLANTING—CAUSES OF ITS FAILURE.

BY WILLIAM BACON, RICHMOND, MASS.

Who can tell the number of fruit trees that have been planted in the country within the last twenty-five years? That they have been many, every observer knows full well; that a large proportion of them have amounted to no more than the setting of so many dry poles. Indeed, we have seen men laboring in tree setting, who did not seem to give more labor than they would have done in setting a hop-pole, much less than in setting a bar post; simply a hole as large square as the blade of the shovel, and of a depth of two-thirds its length, was made, sometimes in swarded land that for long years had not polished a plowshare, and the roots of the tree thrust in, and the earth and turf replaced; and so the labor of planting an orchard was soon over. We have seen many trees so

planted die, just what they should do, if they fell into the hands of those who would not use them better. And then we have heard vile anathemas denounced on nurserymen "who sold such miserable trees," and that it would not do to bring trees from such a section of country, the soil and climate were so different. We have heard those who carelessly planted trees, and very properly lost them, say, "We would like an orchard, but have tried setting out trees, and they would not do any thing. My soil or the seasons, or some thing, is so different from what it formerly was, that trees fail, and I have given up trying to raise them."

Touching the first of these excuses of want of success, we are inclined to the belief that, as a body of men, our nurserymen are as honest as any other class. In our experience, we have sent orders for trees, and have had them filled as much to our satisfaction as though we had been on the ground to see to selecting, taking up, and packing ourselves. That there may be exceptions to this class, is very possible. Indeed, it is very strange if there are none. It becomes purchasers to find who these exceptions are, and let them alone before beginning with them. We fully believe there are honest men enough in the world for all honest men to deal with. To cure dishonest ones, it is prudent to let them alone until they are willing to act on principles of probity, and thus we would dispose of the first objection to raising fruit trees.

"The soil and seasons are so different." With regard to the soil, this assertion, so far as it relates to the older settled portions of the country, is partly true and partly false. The soil, what remains of it, is the same now that it was ages ago. The same rocks are disintegrating now that were crumbling to pieces for time indefinite before the arm of cultivation had gathered the first bountiful harvest that civilization had called forth from the teeming bosom of fertility. It is only the circumstances of the earth have changed. Continued croppings and careless tillage have to a great extent effected this. What quantities of beef, pork, mutton, wool, grain, hay, and, indeed, all marketable substances that the earth brings forth by cultivation, have been taken and sold from off the farms and gardens of the country, for which no restorative properties have been returned? Considering the amount of soil that has been so taken off and disposed of, it is in no way strange that mother earth sinks back exhausted into her own lap, and refuses to labor as she did in her youth, for the benefit of her earth-robbing children. It is no wonder that her once deep, virgin soil sinks down to a few fertile inches, and becomes cold, and hard, and damp, as she settles into the lethargy induced by labor; no marvel that her natural drains and water courses, that fed the beautiful springs of other years, have become clogged up, and that their waters spread and settle when they can, giving clamminess to soils that once were light, and acidity where once all was sweetness.

"The soil is changed." Not in its primitive condition so much as in its productive powers. It has been robbed of the strength which was accumulated by

ages of forest growth and decay, when each year it produced more and retained all. The economy of nature has further been disturbed. Her pores have been closed up, so that the powers of absorption and evaporation have become inactive and unhealthy. Man, not nature, has effected this change for the worse. Man has the means to apply the remedy for the evil he has so heedlessly inflicted. He should have gratitude to do it; at least his self-interest ought to set him at work. How to do it, may be a question.

There are two conditions existing in a great proportion of the soil in the older portions of the country, denoting that it has changed, and that fruit trees will not succeed as well as they formerly did. One of these is a superabundance of moisture in wet seasons, and a great lack of it in dry ones. This may seem a contradiction, but it is not. Such lands are too wet in rainy periods, because all the water that falls upon them, and perhaps more, is compelled to remain on or near the surface. The natural channels for removing it have become clogged, so that it can not pass away. Then the earth beneath has been robbed so that it has become compact. Its pores are closed so that it can not absorb this water, and retain it in its reservoirs, to be taken off again through the same pores for the benefit of plants, as their circumstances need. There it remains surface water, or water just below the surface, until the storms are past, and the thirsty air drinks it in particle by particle, until a baked dryness marks the place once almost a quagmire. The condition of the soil may or may not be quite so bad as we have shown. Circumstances may change with locality. Cause and effect may vary in degree according to circumstances. There is much land in this condition in various degrees, within our knowledge. The character of all crops changes on such lands. Grains die out upon them. The finer grasses die earlier here than in proper soils, and are succeeded by coarse, sour ones, if any at all, that even the beasts of the field reject. Can trees grow in such soils? Turn them out to common and see what happens. The willow may live, but it will not flourish there. How much less, then, can a fruit tree succeed? Their planting out may well be given up, because the *condition* of the soil (*not the soil*) is *changed.*

The condition of this soil can be changed again. It can be made as fertile as it was in the first harvest that moved over the ruins of the forest which gave way to the wheat field. It can be made to produce as large and as beautiful fruit trees now, as were those that took the place of the Oak, the Maple, the Chestnut, or the stately Elm. How? Let man retrace his steps and repair the evils he has wrought. *The earth is the same.*

To do this, there are, in the first place, two very important labors to be performed. First, thorough draining; after that, deep and thorough culture. There are other things that may follow, but these are the main considerations. Make your land so dry that there will be no excessive moisture in storms. Open the water courses so that no water will remain standing there to freeze and thaw with every change of temperature; and work deep and thoroughly, so that structure

may be called from beneath in dry times, and the roots of the tree may travel free and unrestrained to gather food and support for the beautiful structure over them.

[Mr. Bacon has here painted a life-like picture with the pencil of an artist. It is only, unfortunately, too true, and needs no embellishment at our hand.—Ed.]

NOTES ABOUT THE ACACIA (YELLOW LOCUST.)

BY S. L. B., BROOKDALE FARM, ME.

In additon to the remarks of Mr. Bement upon this tree—vol. xvi., page 169—I desire to add a few notes concerning its history, uses, quality, growth, etc., and in doing so I shall present several extracts from a work upon the Acacia, published by subscription in 1842, by William Withers, of Holt, Norfolk, England.

The Acacia originally derived its name from the botanist who raised it from seed, and introduced it into Europe; this was John Robin, an eminent naturalist, and one of the professors of *Le Jardin des Plantes*. It was during the reign of Henry IV.—1600—that this service was rendered to Europe, and Linnæus decided that the benefit should be commemorated by calling the tree *Robinia pseudo-acacia*. When first introduced into France, it was rapidly propagated, for all were eager to have it on their ground. Its rapid growth, the sweet scent of its flowers, and the graceful beauty of its foliage won for it great admiration; but as the tree became more common, this interest died away, fashion changed, and the Acacia was left neglected. The form of the leaves is very graceful; they are conjugate, and composed of leaflets which are soft to the touch, of a lively green color, and are unattractive to insects. This is somewhat remarkable, when the bark and wood of the tree are infested—according to Dr. Harris—by the grubs of six or seven species of insects.

If planted in a situation favorable to its growth, the Acacia assumes an elegant, tufted appearance, admitting the rays of light, which break playfully through its open branches. Not unfrequently the tree is trained against a trellis so situated that its foliage shall produce a pleasing effect of light and shade. The foliage becomes more dense as warm weather advances, whereas that of most other trees suffers and droops when long exposed to the rays of the sun. It bears pruning remarkably well. In writing of the flowers of the Acacia, Mr. Withers says: "It produces numerous clusters of milk-white flowers, the odor of which is diffused to a considerable distance. It sometimes comes into blossom during the first year in which it is planted. The scent is not unlike that of the orange-flower. An arbor of Robinias is sufficient to perfume a large garden. The flowers are, however, very fugacious, lasting only about eight days; but they do not lose their perfume, which may be communicated to pomades, liquors, and syrups. It is said

that in St. Domingo they distil a most excellent liqour from the flower of the Acacia."

In regard to the value of the wood of the Acacia for timber, I will give an extract from V. de Feuilke, a French author, who prepared a very learned treatise on the "Comparative Value of Indigenous and Naturalized Trees." He states that "the Robinia, on account of its general utility, is one of the best trees ever imported from North America into Europe." This author's close observation led him to conclude that the wood, in its green state, possesses, bulk for bulk, more ligneous qualities and less sap than any other tree. A cubic foot, according to his calculations, weighs 58 pounds 11 ounces; and a cubic foot of the dry wood lost in weight only about three pounds. This writer also observes that one of the most important circumstances in the different kinds of wood is the bulk they lose in drying. Dr. Darlington, in his "Agricultural Botany," writes: "The Locust attains its greatest perfection in Kentucky and Tennessee, where it reaches to the height of ninety feet, with a diameter of four feet. The timber is one of the most valuable, whether for strength or durability; in the former quality it ranks but little below the oak, while its resistance to decay, even when exposed to the most destructive influences, exceeds that of the wood of any other of our forest trees." Loudon, in his "Arboretum," publishes the result of experiments at the government dock-yards in Liverpool, to determine the real qualities of the Locust, and it is shown from these investigations that the wood grown in good soil, in a favorable situation, "is heavier, harder, stronger, more rigid, more elastic, and tougher than the best English oak."

M. Neuchatlau, a distinguished French botanist, who published a short treatise on the Acacia, which was translated and issued in England some twenty years ago, in speaking of the rapid growth of this tree says: "In the park of Enghien some Robinias were raised from seed, which in the course of three years and a half had attained the height of 25 feet, and were 9½ inches in girth. It is evident that these trees must have been grown in very favorable soil; at the same time, it should be observed that the Acacia pushes very rapidly at the early stages of its growth, producing branches over six feet and a half in length, at one flowing of the sap." This writer also states that at Rochette, near Melern, he measured some of these trees which had grown nine feet and ten inches in one year. An intelligent cultivator who resided in Pennsylvania about the beginning of the present century, published the following concerning the rapid growth of this tree: "I am not aware that there is any tree which vegetates so rapidly as the Acacia. In the month of April, I cut down a young tree which was nearly seven feet in height, to make two hoops. In the following October, the shoot that had proceeded from the stock was ten feet high, and three and one half inches in circumference. I once passed a silken thread round one of my Acacias in the month of June, and five days afterwards the thread was buried in the bark."

A Frenchman who resided in this country in 1786, contributed to the Agricul-

tural Society in Paris, a report originally published in the transactions of the Society for that year. He says in his introduction that he does not write as a scientific botanist, but only as a cultivator; and in the report he gives a particular account of all relating to the culture of the Acacia as it came under his observation at that time. I give one or two extracts from this report as being of interest:

"The two-thorned Acacia (*Robinia pseudo-acacia*) is indigenous in the Middle States. I have seen it in the forests of Pennsylvania, Maryland, Connecticut, New York, and Massachusetts. The colonists were first induced to distinguish this tree from a multitude of others, by the order, arrangement, and beauty of its leaves, and the sweet scent of its flowers. They soon, however, ascertained the astonishing durability of its wood, and the rapidity of its growth; and, struck by the advantages thus offered to them, they collected the seeds and formed nurseries of the plants, particularly in the County of Lancaster. Shortly after this they began to plant the tree in favorite spots, before their doors and round the grass plots where the American women are accustomed to spread out their linen to whiten by exposure to the dew. It was soon observed that the shade of the tree, so far from producing aridity of the soil, and destroying the grass beneath it, strengthened the herb, and rendered it sweet and luscious, so that cattle ate it with greater avidity than any grass that grew elsewhere. This induced agriculturists to plant it in meadows, and similar results ensued. Soon after, the Acacia was planted in the vicinity of wells and running brooks, and especially near those places where horses were taken to water, with a view to afford both shade and shelter."

"The Americans make use of the Acacia to secure the banks of their rivers from injury which they are liable to sustain from the combined effect of ice, rain, wind, thaw, and the power of the sun. These, by causing the banks to yield and crumble down, obstruct navigation, and sometimes carry away a portion of the neighboring fields. To obviate inconvenience, this occasioned the natives to plant Acacias very closely together; and by keeping their heads constantly cut to the height of bushes, they cause the roots to ramify to a great distance, and thus the banks are held firmly together, and effectually preserved from the destructive operations of the waters."

This same author, in his "Memoir of the Acacia," tells an anecdote to illustrate the rapid growth and value of this tree:

A friend of his, the year he was married, planted fourteen acres of the Acacia, intending not to touch them until his first child should be married. He took no other care of them than to have them properly fenced off. At the age of 22 his son was desirous to settle in life, and wished the assistance of his father. He sent to a ship-carpenter and sold wood of the Acacia plantation to him for $1,300, for which he purchased an estate for his son in Lancaster County. Three years after he established his daughter in the same way, and in like manner provided a fortune for all his children.

William Cobbett, who resided in this country during the years 1739–1800, produced quite a mania for the Acacia in England about the year 1823. He wrote largely in its favor, describing the timber as "absolutely indestructible by the powers of earth, air, and water," and calling it the "tree of trees." He was at this time engaged in importing tons of seed and trees from this country, calling them *Locust* trees, since which time this name has been superseded for that of the original one—*Acacia.*

[A very interesting contribution to the history of one of the most valuable of our trees. As a timber tree its value is not exceeded by that of any other that can be planted. We esteem it a very beautiful and striking tree for landscape effect, though seldom used for that purpose. Its effects in the way of light and shade can be produced by no other. It will grow in almost in any soil. Some of the poorest lands of Long Island are covered with it. It is a mistake, however, to suppose that its leaves are not preyed upon by insects; these, thus far, are confined to localities, but gradually spreading. In September we have seen plantations of thousands of trees completely browned by an insect which eats out the green matter (*chlorophyl*) between the epidermis.—Ed.]

GRAFTING THE GRAPE VINE ON PIECES OF THE ROOT OF THE WILD FOX GRAPE.

BY HORTICOLA.

Several years ago I read something about grafting the grape vine on pieces of the root of the wild Fox grape, and, fond as I am of experiments, I concluded to try it as soon as I should have an opportunity. In the spring following, having come into possession of two very vigorous plants of the *Anna*, I sent a man out into a neighboring swamp to dig some roots of the Fox grape. This took place on the *fourth of April*, while the ground was still frozen in many places not exposed to the rays of the sun. I chose only such parts of the root as were succulent, not woody, and not much thicker than a goose-quill, and cut them into pieces from five to six inches long, being careful to take only pieces that had some fibres. The method of grafting was the common cleft grafting; some of the scions, however, I spliced on, tying every one of them with woolen yarn, and waxing the tops of the roots around the scions. Each scion had two buds. They were planted so deep that the uppermost bud was just visible above the ground. To be perfectly accurate, I should have stated that a stump about an inch long was left above the uppermost bud of the scion.

I was not a little astonished to see *every one of them grow.* They were twenty-three in number. A gentleman of large experience in propagating the vine, when he saw my young plants, expressed his surprise at my success.

At the same time I grafted similar pieces of root with scions of but one eye each. Some of them took very readily, *i. e.*, Diana, Hartford Prolific, and Concord, yet some of the very same kinds did not. This was owing to the impossibility to plant them deep enough; they dried up.

Although I had succeeded so well, yet my interest in cultivating the grape vine was then exclusively confined to experiments for their own sake, so that I neglected the plants, part of which were accidentally destroyed. Those left I took up in the second fall after planting. The union of the scions and roots was so perfect, that I was unable to discover the place where it had been effected. The roots were from ten to twelve feet long.

That I should feel very much encouraged by this experiment, was very natural; consequently I persuaded several friends of mine to adopt this mode of propagating. Last spring I grafted in the same way more than *four hundred* Annas, Delawares, *Dianas*, *Herbemonts*, and a great many other kinds, with so much confidence, that I made simultaneously arrangements for transplanting them as soon as necessary, promising to my friends lots of them. They took nicely, but after they had developed one or two leaves each, EVERY ONE OF THEM DIED!

I can hardly say whether I prefer my former success to this failure, which, being so general that there was not a *single* exception, induced me to investigate the matter and to find out the cause. In this, I think, I succeeded perfectly; I do not hesitate to let the readers of the HORTICULTURIST into the secret, on the condition that each of them who is in a proper condition shall try my experiments, either to verify or explode them.

As stated in the above, I planted the grafted roots so deep that the uppermost eye projected just above the ground. Here I will add that I planted them *perpendicularly*. Last spring, however, I planted them *slantingly;* in fact, I laid them in a furrow wide enough to receive them, inclining against a little ridge at an angle of 45 degrees. The scions had very little soil on them to protect them against sudden atmospheric changes; so every one of them was destroyed by the late frosts of the spring. *Had I planted them as deep as I did the first time, the bud just above the junction would have been safe.*

When "El Medico" reads this, he will easily believe that I should wish to be able to annihilate the space stretching between him and myself. I greet him with the words of Tibullus: "Vivite felices, memores et vivite nostri!"

[By a strange coincidence we have both El Medico and Horticola in our present number. We embrace the occasion to place their hands together, and congratulate them as "fratres gemini" in grape grafting under difficulties.—ED.]

RESTORATION OF FROZEN PLANTS.

BY PETER HENDERSON, JERSEY CITY, N. J.

Mr. Editor :—I confess myself somewhat mystified by the philosophic theory of your correspondent, Daniel Barker, in last month's Horticulturist, on this subject; the reasoning is too profound for my apprehension. I can not follow him, and can only understand his deductions, from which I entirely disagree.

He says "it follows that the application of water should commence before there is any alteration in the temperature of the surrounding astmosphere:" by which is meant, I suppose, that on finding our plant-house frozen on getting up in the morning, we must not apply fire, but water. I am afraid Mr. Barker will find few converts to that doctrine, no matter how fine he may show it in theory—disastrous experience in practice is strongly against it. We will suppose that, on entering a green-house at six in the morning, we find the plants frozen, the thermometer marking 28 degrees, with an outside temperature below zero, and a high wind from the north; under such circumstances I have repeatedly seen the thermometer fall from 2 to 4 degrees before fire, with all possible speed, could be got to act on the flue or pipes. Would Mr. Barker, under such circumstances, still persist in applying cold water? If he did, he may rest assured that it would dissipate his fine theory and the existence of every tender plant at the same time.

I know that the opinion is very general that when plants are frozen they are benefited by being shaded from the sun's rays, and by gentle syringings of cold water; but with all deference to the belief, I must say that my own experience leads me to the conclusion that it is a doubtful remedy. We are too apt to receive a handed-down maxim of this kind as a fact, without investigation or experiment. Getting a house of plants frozen is always a serious and vexatious matter, and few have courage enough to experiment, but at once apply the popular remedy. And as a sick man may use a harmless quack medicine, if it results in a cure, (!) the medicine is lauded by the grateful patient; if he dies, he was too far gone for recovery. Just so with a frozen plant. If Jack Frost has laid his hand but lightly on, it will recover, medicine or no medicine; but if severe enough to rupture the cellular tissue of the plant, all the remedies in the world will not avail.

I had an excellent opportunity of testing this matter, on the night of the 5th of February of last year—the coldest of my experience. Our means of heating were found entirely inadequate to keep out the frost; the consequence was that I had several of my green-houses frozen, two of them very badly, but as is usual in such cases, frozen only at one end of the house. Although I had no faith in the shading and sprinkling remedy, I resolved still further to confirm my unbelief.

One house containing Verbenas was shaded and sprinkled in the orthodox style, after the thermometer had reached 32 degrees. The other, containing Fuchsias, Geraniums, Heliotropes, &c., was left exposed to the sun's rays without sprinkling.

Now mark the result. In *each* house for the first four or five sashes, where the frost had struck severely, all were killed outright; in the next four or five sashes, some were killed, and some severely injured; the remaining part of houses being but slightly frozen, were nearly free from injury. The effects in each house were as nearly alike as they could be; there was no difference perceptible in the house where the remedy was applied, and where it was not.

But doctors differ, and I see, Mr. Editor, that I differ with your august self in this matter. But the next time you are unfortunate enough to get "caught" by our arch-enemy, make "two divides" of your parlor pets, faithfully and hopefully sprinkle the one lot, and leave the other unbaptized heathens, and give the result to your readers.

[We leave Mr. Barker to respond in his own behalf. We have stated our practice to consist in shading the plants, raising the temperature very gradually a few degrees above the freezing point, and then applying cold water. Our success has been almost uniform; Mr. Henderson confesses to a decided loss in both his cases; we therefore feel warranted in holding to our plan for the present. We mean, however, to give his a faithful trial at the first unfortunate opportunity. But his plan does not differ so materially from ours as would at first sight appear; for the coating of ice on the glass of a green-house forms a very good shade indeed, though in a bad case we should want something additional. Plants may undoubtedly sometimes be so frozen as to be past recovery; but we have no hesitation in saying, that our plan, faithfully observed, will in a majority of cases prove decidedly efficacious. We have here a fine field for experiment, but a costly one. Mr. Henderson's article was intended for our last number, but was crowded out.—Ed.]

YELLOW NELUMBO, OR WATER CHINQUAPIN (*Nelumbium luteum.*)

The Nelumbium, and, indeed, all kinds of water plants, have received increased attention since the introduction of the Victoria regia. The N. speciosum, a finer species than the N. luteum, but much more tender, was first grown here under glass by the late Mr. Hogg; indeed, we think he was the first one to make speciosum bloom. Of N. luteum we have received a package of seed from a friend in Woodstock, Salem Co., N. J., which we shall be glad to distribute among those who may wish to grow it either under glass or in artificial ponds. It is hardy in the Northern States. With the seed we received the following notes, which will be found instructive and interesting:

"The Water Chinquapin has the largest flower of any plant native in the Northern States. Its habit is much like that of the Pond Lilies, and it is common in the waters of the Southern and Western States, though rare in the Middle and Eastern. It grows readily, and can easily be introduced in favorable

localities; and with its enormously large leaves and flowers would make a handsome addition to our list of water-plants. Bartram, in his Travels, (page 408,) makes the following note in regard to it: 'Next morning entered the Tombigbee, and ascended that fine river; just within its capes, on the left hand, is a large lagoon or capacious bay of still water containing many acres in surface, which at a distant view presents a very singular and diverting scene, a delusive green wavy plain of Nymphæ nelumbo; the surface of the water is overspread with its round, floating leaves, while these are shadowed by a forest of umbrageous leaves, with gay flowers, waving to and fro on flexible stems, three or four feet high; these fine flowers are double as a rose, and when expanded are seven or eight inches in diameter, of a lively lemon yellow color. The seed vessel, when ripe, is a large, truncated, dry, porous capsule, its plane or disk regularly perforated, each cell containing an oval osseous gland or nut, of the size of a filbert; when these are fully grown, before they become quite hard, they are sweet and pleasant eating, and taste like chestnuts. I fed freely on them without any injury, but found them laxative. I have observed this aquatic plant in my travels along the eastern shores of this continent, in the large rivers and lakes, from New Jersey to this place, particularly in a large pond or lake near Cape Fear River in North Carolina; this pond is almost two miles over, with twelve feet water, notwithstanding which its surface is almost covered with the leaves of this plant; they also abound in Wakaman Lake, near the same river, and in Savannah River at Augusta, and all over East Florida.'

"The tuberous roots, according to Mr. Nuttall, resemble those of the Sweet Potato, and are traversed internally by from five to seven longitudinal cavities. They are found at the depth of from twelve to eighteen inches below the surface of the earth, and are connected by running roots. When fully ripe (which is when the seeds have arrived at maturity) they become, after considerable boiling, as farinaceous, agreeable, and wholesome as the Potato. The leaves are round, and from twelve to eighteen inches in diameter; the flowers are pale yellow; the top-shaped seed-vessel is three or four inches in diameter, and has in its flat top, fifteen or twenty cavities, in which the acorn-like seeds are lodged singly.

"The following notes from Loudon's Encyclopedia, upon the Nelumbium speciosum, may be interesting: 'Thunberg says that it is considered as a sacred plant in Japan, and pleasing to their deities, and that the images of their idols were often drawn sitting on its large leaves. The long stalks are there eaten among other pot herbs. Loureiro relates that it abounds in muddy marshes in India and China, and is cultivated in large handsome pots in the gardens and houses of the mandarins; that there is a variety with the flower of pure white, and another with a very beautiful luxuriant flower, having about a hundred large petals, white or rose-colored. Both roots and seeds are esculent, sapid, and wholesome. In China it is called Lieu-wha, and the seeds, and slices of the hairy root, with the kernels of apricots and walnuts, and alternate layers of rice, were

frequently presented to the British ambassador and his suite at breakfast given by some of the principal mandarins. The Chinese have always held this plant in such high value that at length they regarded it as sacred. That character, however, has not limited it to merely ornamental purposes, for the roots are not only served up in summer with rice, but they are also laid up in salt and vinegar for the winter. The seeds are somewhat of the size and form of an acorn, and of a taste more delicate than that of almonds. The ponds are generally covered with it, and exhibit a very beautiful appearance when it is in flower, and the flowers are no less fragrant than handsome. It grows spontaneously in China, and is propagated in the open air with ease, both by the seed and root. It is said that the seeds will keep forty years, vegetate freely, and flower the first year.'

"In green-houses the Nelumbium should be grown in a tub or large pot, in a rich loamy soil. The pot or tub should be kept full of water all the time the plants are growing, but may be allowed to get dry when the flowering season is over. The plants may be increased by dividing at the root, but it is obtained more readily from seeds, which vegetate freely."

OSAGE ORANGE HEDGES.

BY "OUT WEST."

We think this subject may be classed among those which can properly, and profitably, be discussed in the Horticulturist. While entertaining these views, we have been anxious to see some one give his experience, together with such practical directions for the proper cultivation and training of the Osage Orange as would enable those who are desirous of giving it a trial, an opportunity of doing so. Many have been deterred from entering upon its cultivation, from witnessing the many failures among those who have planted it, and who, after having started, did not understand the after management, so requisite to success. Many very liberal-minded gentlemen have condemned it, merely from witnessing the miserable apologies for hedges to be seen all over the country, wherever it has been introduced. It is to present to such persons, and all others who desire to give it an impartial trial, a few concise and practical directions for its cultivation, that we have been induced to write an article on the subject. It may be proper to remark, before proceeding farther, that we have found it to be perfectly hardy. We have seen it endure 30 degrees below zero, which, we think, will justify us in declaring it hardy enough for all practical purposes. It does get killed back more or less according to the severity of the weather every winter, and sometimes gets killed outright during the first winter after planting; but in the proper place, we will give such directions for protecting the hedge, as will effectually prevent its occurrence.

When the plants can be bought at reasonable rates, we would recommend pur-

chasing them, rather than undertake to raise plants; for it is attended with a great deal of trouble, and often results in failure. For those, however, who are desirous of raising their own plants, we will state two methods of preparing the seed. One is to mix the seed with light, moist soil or sand. We think the latter preferable. Expose it to the frost, that it may be thoroughly frozen, in the same manner that many other kinds of seed are prepared, to secure vegetation. The other is to thoroughly *moisten* the seed with warm water, and *keep it moist.* Place in a tolerably warm room; not too warm, for too much heat causes fermentation. This latter must be carefully guarded against. It is to be avoided in two ways. One by not giving them too much heat, and keeping the temperature as even as possible. The other, by not placing in too large a bulk. The seed should also be frequently stirred during this process. From one or more causes, the seed will not be likely to vegetate evenly. Watch it closely, and assort as often as is deemed necessary. If not convenient to plant them, place in a cooler situation. We think it better to have the soil prepared, that it may be planted immediately. The soil must be in proper condition as to warmth, that the seed may not rot after planting. This is a prolific source of failure with the inexperienced planter. Prepare the soil as you would for different kinds of garden seeds; which means to prepare it *well.* Plant in drills, eighteen or twenty inches apart, and not too thick in the drills. Cultivate well during the summer to insure a healthy and vigorous growth. After the frost has killed the foliage, or rather after vegetation has ceased, the plants can be carefully taken up, and heeled in, in such a position that they will not be exposed to the direct rays of the sun during winter. It will be better to cover them with loose litter of some kind. Almost any thing, excepting fresh horse manure.

The soil, for the reception of the plants in the hedge row, should also receive a preliminary prepartion in the fall. Plow deep and thoroughly, and it will repay tenfold the amount of labor expended. A space of ground, not less than six feet in width, should be devoted to the cultivation of the hedge. In the spring, as soon as is convenient to commence operations, plow the ground thoroughly, but not quite so deep as the previous plowing. Give it a good harrowing to pulverize the soil well, and it will be ready for the reception of the plants. Prepare the plants by cutting off all mutilated roots, and cutting off the tops to within two or three inches of the root, or rather that portion that was near the surface of the ground, during the previous summer's growth. This will be readily identified by the yellowish color of the bark. Have the hedge-row perfectly straight. It will be more satisfactory to yourself, besides adding an inexpressible charm to the appearance of a place, that no care, no matter how assiduously applied, can bestow, if the work has been bunglingly done at the beginning. We wish to call attention particularly to this point of the subject, because it will not only cause vexation, if not attended to at the proper time, and subject your work to the ridicule of the incredulous, who always have an "I told you so" at their tongue's end to apply, whenever from

any cause, (no matter how unavoidable on your part,) that a failure may take place, that did not meet with their special approbation.

The planting will next require your attention. There are three ways that this can be accomplished. First by setting a line, and planting with a dibble. The second by throwing the soil from the line with a spade, to a sufficient depth to admit the roots of the longest plants. Place the top of the plants against the line, and then fill in the dirt, and make it compact by trampling it with the foot. This is rather surer, but is not quite so expeditious as the former. The last is more expeditious than either. A good steel mold-board plow, and steady team, with a good driver, are the requisites to success. Follow in a direct line of the stakes, throwing out the soil to a sufficient depth; place the plants in their proper position; throw in the soil with shovel or spade; press compactly with the foot, and level off that it may present a neat appearance, and the work is done. I should have mentioned before that the plants should be about six inches apart, or one hundred plants to every three rods of ground.

[In many sections of our country hedges have an importance beyond their mere beauty. For a useful hedge, the Osage Orange is one of the best we have. May we not hope that "Out West" will continue the subject, and give our readers his mode of after treatment, which is quite as important as planting, especially while the hedge is in process of formation.—Ed.]

VANDA SUAVIS (*Fragrant Vanda.*)

(*See Frontispiece.*)

BY THE EDITOR.

We present as a frontispiece this month a very fine engraving of the *Vanda suavis*, copied from Curtis's Botanical Magazine. It was introduced from Java in 1847, and is one of the prettiest as well as one of the most fragrant of this singular class of plants. It belongs to the order of Orchidaceæ, which are popularly called *air plants*. The Vandas grow upon trees, and derive their support chiefly from the atmosphere. When grown under glass, they are usually attached to a piece of wood, cork, or something of that kind. They are also sometimes grown in wire baskets, filled with moss and potsherds, or pieces of charcoal. Some, also, are grown in pots filled with moss and potsherds. During the growing season they require a pretty strong, moist heat, and frequent applications of water. While dormant, they should be kept comparatively dry, and in a low temperature. The Vandas are among the most beautiful and interesting of this tribe of plants, and should be in every collection of orchids. Mr. Van Vorst, of Jersey City, has some very fine specimens in his large collection, which is the best that we have seen.

JAPANESE TREES.

A few days since, while sitting in our office, there walked in a gentleman, with an intelligent face, and frank, pleasant manner, introducing himself as Dr. Hall, of Japan, whom we had for some time well known by reputation. In the course of much pleasant conversation about the climate and productions of that country, he informed us that for the past two years he had resided at Yokohama, and being greatly interested in trees and plants, had, for his own amusement, collected in his garden all of any interest which Japan contained. It being known that he was a buyer, plants were brought him from the interior, from mountain and valley, until his collection was as rich as any botanical collectors could make it, if they had access to every part of the country, which they may not have for years. Expecting to return home this year, he had also collected a large quantity of seeds of trees and plants, many of them unknown either in Europe or this country.

These plants and seeds he had brought with him, except some six Wardian cases yet to arrive, and proposed to place them all in our hands for propagation and culture.

It gave us much pleasure to meet his wishes, and he returned the next day with his collection.

If you have ever seen the eagerness with which a connoisseur in pictures superintends the unpacking of some gems of art, among which he thinks he may possibly find an original of Raphael or Murillo, you will have some idea of the interest with which all, both employers and propagators, surrounded those cases while they were being opened. Among the living plants, and in fine condition, was that beautiful new evergreen, *Thujopsis dolobrata;* then a new species of *Cryptomeria*, with some fine new conifers without name; then fifteen new double-flowering *Cherries*, one of them described by Dr. Hall to be as large as a rose; eight new *Wistarias*, of different sorts, some with variegated foliage, and one with racemes a foot and a half long; seven *Salisburias*, with variegated foliage; the green *Aucuba*, a new *Japan Berberry*, a new *Magnolia*, a dozen *Maké*, the great timber tree of Japan; five new *Hibiscus*, forty-five *Maples*, many of them variegated, and some as drooping in their branches as the Weeping Ash; a weeping *Pyrus japonica*, that, grafted on a large quince or apple, would make a beautiful tree covered with brilliant crimson and scarlet flowers.

There were also four new sorts of *Weigela*, some of them with variegated foliage; seven new *Honeysuckles;* a variegated *Elæagnus;* three new *Oaks*, one with variegated foliage and leaves a foot long, and another with very curious indented leaves; a new *Chestnut;* six new *Japan Lilies*, different from any thing yet known here; eight new *Columbines* and other herbaceous plants; a variegated, a dwarf, and a giant *Bamboo*, and six new sorts of *Chrysanthemums* of superior beauty; as these plants are *all alive and in good condition*, we hope that another year will enable us to disseminate them.

Among the seeds, which are in fine condition, are a quantity of *Sciadopytis verticillata*, a new Conifer, described by those who have seen it, as being very unique, and possessing unusual beauty; ten distinct sorts of *Retinospora pisifera*, a new evergreen shrub, some of which have variegated foliage; *Pinus Massoniana*, both cones and clean seed; a new *variegated Pine;* a fine lot of *Thujopsis dolobrata; Abies firma;* six new sorts of Conifers; a lot of *Wistaria* seed; a peck or more of the *Green Aucuba;* the *Japan Persimmon;* seed of new *Japan Lilies;* new *Acacias; variegated Camphor Tree;* seeds of a tree with variegated leaves, and growing like the poplar; another tree, growing like the poplar, with variegated leaf and yellow Hibiscus-like flower; a new weeping tree, with white flowers; a new *Juniper*, new *Magnolias*, *Maples*, and *Chrysanthemums;* a quantity of *Maké*, the great timber tree of Japan; a quantity of variegated *Ginko* tree; a new *Fern;* a new *Primrose*, whose flowers are produced in an upright cluster, the shape of a pagoda; and a large number of other tree and shrub seeds, described by Dr. Hall as unlike any thing we have here, and as possessing great beauty.

To name these, we shall have to call in the aid of our friend Dr. Torrey, as soon as their lineaments shall have obtained by growth sufficient distinctness to enable him to pronounce upon them. Dr. Hall speaks of the great variety of trees in Japan with variegated leaves, and which are among these. They will give a new beauty to our lawns, and be more permanent than flowers. It gives us much pleasure to speak at this early period of the arrival of these plants and seeds in this country, both because we wish the horticultural world to know how much it is indebted to the enterprise and plant love of Dr. Hall, and because a collection so rich and so varied has never been obtained from any country, even by the best English collectors, while the similarity of the Japanese climate to our own renders this collection of peculiar value. The Wardian cases yet to arrive, contain Conifers and other rare plants, the character of which will be announced as soon as opened. PARSONS & Co.

Flushing, March 20, 1862.

[Just as we were finishing our last form, "there walked in a gentleman, with an intelligent face, and frank, pleasant manner," but quite out of breath from his efforts to reach our elevated sanctum, which, the reader should know, is so high that we have "The World" just beneath our feet. The first glance convinced us that something good had happened. After reading the above, the reader can judge whether we were not right. So much horticultural treasure is almost enough to turn one's head. So many fine things have never before been introduced at one time. Our English brethren pride themselves, and justly, on their enterprise in collecting rare and beautiful plants from all parts of the world; we have done comparatively nothing. Let us hope that the splendid collection now placed in the hands of the Messrs. Parsons will, in this respect, mark a new era in our history. We shall, as soon as possible, examine this collection, and lay the result before our readers.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, Remittances, Packages by Express, Advertisements, &c., should be directed to MEAD & WOODWARD, Editors and Proprietors, 237 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

RICHARDSON'S SEEDLING DAHLIAS.—A visit to Mr. Henderson's propagating house shows the young plants of these seedlings to be coming on finely. Having seen them for two years past, and selected them for names, we are prepared to say that they compose the finest lot of seedling Dahlias we have ever seen. They ought to be in every garden.

EATING NATIVE GRAPES.—An issue having been made on this point, testimony is now in order. The following is from Mr. Mottier, of Cincinnati, whose large experience gives a direct value to his testimony:

"I was quite surprised at the account of the effect of eating freely of the Catawba grape about Cincinnati, causing violent deaths, &c. I have been for thirty-one years in the neighborhood of Cincinnati, in the vineyard business, and have had from eight to twenty-four hands, male and female, at the vintage every year for twenty-eight years. I never knew of any such bad effects. On the contrary, some feeble female would improve very much in health and appetite. I have always known our native grapes as being the healthiest fruit, when ripe, that any one could eat. I have been in market in Cincinnati, and have heard people, hundreds of times, inquiring for ripe Catawbas for sick people.

"I have been to see an old physician of over twenty-five years' practice in Cincinnati and surrounding neighborhood, to ascertain whether he had heard of any deaths or bad effects from the eating of Catawba grapes. He said positively he never did. I pointed out the article of Dr. J. S. Houghton, of Philadelphia, on native grapes, in the January number of the HORTICULTURIST. He promised that he would reply to it soon.

"I recollect of an old German, about forty years ago, (I lived then near Vevay, Indiana, neighbor to this man.) One season he was very sick of fever; the doctor could not help him; he said to me that he had made up his mind that he must die. He had a little vineyard close to his house of the Cape grape; he crawled out to it, sat between two stocks, ate a few grapes, and had hard work to get back to the house. Next day he went back and ate more, and so on for ten days, eating more and more every day. By that time he was able to get on his horse and ride two miles. So much for eating native grapes."

This confirms what we have already said. We shall be glad to hear from your friend, the physician, Mr. Mottier.

THE DOUBLE ZINNIA.—There is a little diversity of opinion in regard to the merits of this flower. We must record our opinion in its favor. Some of the seed sent out may have been mixed with single varieties, and thus produced disappointment. We were so fortunate as to have some seed sent to us last spring

by Mr. Bliss, all of which produced double flowers, not a few of them being quite as perfect as the fine drawing we gave. They were planted very late, however, and produced no seed. We have thought the late planting may have had something to do with the perfection of the bloom. The seeds, indeed, were not put in the ground till July, having been *very carefully* mislaid. We tried to get others, but could not, and planted these with little hope that they would bloom, but were

most agreeably disappointed. We mean to repeat the experiment of late planting. It should be known that the Double Zinnia opens with a single row of petals, the filling up being an after process. We mention this, because a friend of ours, who brought some of the seed from Europe and planted them in his greenhouse, on seeing a few flowers open single, as he supposed, threw away his whole collection, embracing nearly a hundred plants, which had been carefully potted off. In addition to our own plants, we saw many fine blooms of the Double Zinnia in different places during the last season. We do not hesitate to recommend all our readers to grow it. We again present our engraving of it, for the benefit of those who did not see it last year.

CATALOGUES, ETC., RECEIVED.

J. M. Thorburn & Co., 15 John Street, New York.—Descriptive Catalogue of Flower Seeds, with practical Directions for their Culture and Treatment. Appended is also a large and choice List of French Hybrid Gladiolus. 1862.

Gardner Goldsmith & Co., Indianapolis, Indiana.—Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Plants, Flowers, &c.

J. A. Bruce & Co., Hamilton, Canada West.—Descriptive Catalogue of Seeds for the Farm, the Kitchen Garden, and the Flower Garden; also of Culinary Roots, and a choice Collection of Flowering Bulbs for Spring Planting. Garden Implements, Fruit Trees, Shrubs, &c.

The Journal of the Illinois State Agricultural Society, Vol. i., No. 1.—This is a move in the right direction. Every state Society should preserve a record of its doings, either in the form of a Journal or in a volume of Transactions. The present Journal contains the Constitution of the Society, a list of prizes, and a number of valuable Essays.

W. H. Loomis, Woodlawn Green-house and Nurseries, 189 Virginia Avenue, Indianapolis, Ind.—Descriptive Catalogue of Grapes and other Fruits, with full Directions for preparing the ground for their reception, planting, etc.—We have to thank Mr. Loomis for an appreciative notice of the HORTICULTURIST. The fact that it was not solicited is the more complimentary to him and to us. Mr. Loomis seems to understand, that the more good horticultural works are read, the more trees and plants will be sold. Nurserymen would promote their own interests by giving in their catalogues a list of the best horticultural periodicals.

Geo. W. Campbell, Delaware, Ohio.—Reduced Price List of Grape Vines, &c.

John W. Bailey, Plattsburgh, Clinton Co., N. Y.—Periodical and Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, and Plants, cultivated and for sale at the Plattsburgh Nurseries.

Andrew Bridgeman, 878 Broadway, New York.—Descriptive Catalogue of new and select Bedding Plants, Roses, Dahlias, Verbenas, Petunias, &c.

Dailledouze & Zeller, Yates and Myrtle Avenues, Brooklyn, L. I.—Catalogue of Roses, Fruit Trees, Vines, &c.

Correspondence.

Mr. P. B. MEAD—*Sir*:—Will you please to state in the HORTICULTURIST what is the legal postage thereof?

What native grapes are worthy of cultivation where the European varieties will thrive?

Which are the twelve best European grapes, as to flavor and productiveness, in the order of their excellence? Am I right in naming Black Hamburgh, Chasselas de Fontainebleau, Royal Muscadine, Grizzly Fontignan, White Muscat of Alexandria, Sweetwater (Dutch), and Black July, as seven of the best?

Name the order and time of ripening of such twelve in the cold grapery. In this particular, nursery catalogues are much at fault.

Name such twelve in the order of their hardiness, and name the twelve hardiest European grapes in the order of their hardiness and of their excellence.

Are the native grapes, August Coral and Columbian Muscat, (Prince,) worthy of cultivation by the side of the Delaware, Diana, Concord, and Hartford Prolific? INQUIRER.

[The legal postage of the HORTICULTURIST is 18 cents per annum, if paid quarterly in advance, and no postmaster has a right to charge more.

We think the Delaware and Diana worthy of cultivation under the circumstances you name. We could add two or three others not so well known, if we understand your question aright.

According to our taste, the following are the best 12 European grapes: Muscat of Alexandria, Cannon Hall Muscat, Chasselas Musqué, Grizzly Frontignan, Black Frontignan, White Frontignan, Chasselas de Fontainebleau, Royal Muscadine, Black Hamburgh, Muscat Hamburgh, Black Prince, Esperione. You will perceive that we have neither the Sweetwater nor the Black July in our list. We can find no place for them in a list of twelve for *quality*; but for earliness they have their value. We could vary this list without violence to our own taste.

The above will ripen in the grapery about as follows, though something will depend upon their position in the house: Chasselas de Fontainebleau, Royal Muscadine, Chasselas Musqué, White Frontignan, Grizzly Frontignan, Black Hamburgh, Muscat Hamburgh, Esperione, Black Prince, Black Frontignan, Muscat of Alexandria, Cannon Hall Muscat.

In the order of hardiness, the Chasselas class would be first, the Hamburgh class second, the Frontignan class third, and the Muscat class last. Some of the hardiest European grapes are not mentioned in the above list. We may mention among these the Black July, the Sweetwater, the Riesling, the White Lisbon, &c. In speaking of hardiness, reference is had altogether to open air culture; we will add, that it is only under the most favorable circumstances of exposure, shelter, &c., that an occasional crop can be got from these. For a few years some of them

do tolerably well; but the experiment of growing foreign grapes in the open air has been so often tried by skillful and experienced men, with such uniform results, as to compel us to accept the conclusion that they are not adapted to our climate. Besides, those that do succeed occasionally in favorable situations, are inferior to our best native grapes. If you contemplate growing the foreign grape in the open air, we advise you to make a long pause before embarking in the enterprise. Select our best natives for the open air, and grow the foreign kinds under glass. Such grapes as the Delaware, Diana, Rebecca, Manhattan, Anna, Catawba, and a few others, when grown where they can *ripen fully*, will satisfy a very nice taste. There are also three new grapes to be sent out which will take their place among the best.

The August Coral is not as good as the Delaware or Diana. The Columbian Muscat we have not tested. If you will let us know precisely your location and exposure, we have no doubt of being able to make out a choice list of grapes for you, though it may prove to be small.—Ed.]

Editor of the Horticulturist—*Dear Sir*:—During the early part of the past summer I had a very fine bed of Wilson's Albany Strawberries, containing about six square rods of ground, which produced nearly seven bushels of berries, (an enormous yield, I should judge,) but immediately after bearing, the plants began to die out, and have continued to do so, till there is not probably one in a hundred left. On examination, I find that the plants are infested with worms, of from one eighth to three quarters of an inch long, and of the diameter of a pin, and in some cases of a knitting needle.

Now what shall I do to get rid of them? I have about an acre of plants growing near them, and I am fearful that the pest will spread to them. Is it usual for strawberries to be thus infested? I have never read a word from any strawberry grower concerning them, and until recently did not suspect that such an enemy was at hand.

My ground was well manured from a cow-stable, and is rather low, so that it is not much affected by drought. It consists of sand, which will produce little or nothing without manure. I would also state that another field of the same plants, on the other side of the city, and five miles distant, on dry sandy land, without manure, have been injured in the same way.

Chicago, Ill. Inquirer.

[The above, with several other letters of inquiry, was mislaid, or it would have been sooner answered. We suspect that your strawberries were planted on land recently in sod, and that they have been attacked by the wire worm, which is very apt to be the case under such circumstances, though, in our experience only to a limited extent. In land that has been long in sod, the wire worm often accumulates in large numbers. If we are right in our conjecture, there is little danger to your other plants, unless they are growing in sod land. A good dress-

ing of lime and ashes is the best remedy we can suggest. Apply the lime early this spring, and as soon as it has been washed in by a good rain, put on the ashes.—Ed.]

Mr. Mead,—Please tell us in your April number the manner of becoming a member to the "American Pomological Society." Must he be able to pronounce correctly the names of all the French pears? If so, I could not get in. Please say, also, the plan or arrangement for admitting outsiders, for I am desirous to attend and hear the discussions. Very truly yours,

Provincetown, Mass., March 12, 1862. Rufus Conant, Jr.

[Doubtless many others would be glad to have the same kind of information. If you send a couple of dollars to President Wilder, or Treasurer James, he will return you a parchment, giving you all the privileges of membership for two years. These privileges consist in free access to all the meetings, a copy of the published proceedings, the opportunity of making some clever acquaintances, etc. The test you allude to is not applied; it would make the society exceedingly slim and exclusive, and destroy its usefulness. They have not got to that yet! The only "outsiders" admitted are delegates from other societies, and members of the press. All others must "fork over" the "two." We think we have made it plain to you how to become a member.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY.

The Society met at the Athenæum, February 25th, President Degrauw in the chair.

The meeting was opened with remarks by Mr. Mead on the objects exhibited.

The three following questions were asked by a lady:

1. What is the botanical name of the Vinegar Plant? Is the plant easily obtained, and how should it be cultivated?

Mr. Mead said the object referred to was not a plant in the common acceptation of that term. What has been called the Vinegar Plant by the newspapers is better known as the "mother of vinegar." Its nature and action were explained.

2. How should the Perpetual Tree Carnation be cultivated?

The Tree Carnation should be cultivated like the common Carnation in pots. They may be said to bloom throughout the year. Should not be cramped for room. With an average temperature of about 60° they will do well, but more heat will be necessary if early winter blooms are wanted.

Mr. Zeller.—Keep them in a good soil, as much as possible from moist earth. They should not be kept too warm or too damp. From 5° to 10° above freezing will do. If plenty of flowers are wanted, they should be kept warmer.

Mr. Fuller asked if an annual supply of plants was not better; to which Mr. Zeller responded, Yes.

Mr. Mead asked if he made his plants from cuttings or layers.

Mr. Zeller replied, From cuttings.

Mr. Mead.—At what time do you put them down?

Mr. Zeller.—From February to May.

Mr. Mead.—Have you tried them in the fall?

Mr. Zeller.—Yes, sir, very often.

Mr. Mead.—With what success?

Mr. Zeller.—Very bad.

Mr. Mead.—My experience has been somewhat different, for I have been most successful with cuttings put in in the fall. How do you account for your want of success in the fall?

Mr. Zeller.—The plants at that time are more woody, and very hard to strike. The young shoots do better in the month of May.

Mr. Mead.—How do you treat your cuttings?

Mr. Zeller.—Put them out of doors, and treat them as other cuttings.

Mr. Mead.—At what time do you make your layers?

Mr. Zeller.—From June to July.

Mr. McGahry.—Has not the soil something to do with the Carnation? Will Mr. Mead explain?

Mr. Mead.—The soil has much to do with the successful growth of the plant. A good fresh virgin soil, or the top spit from an old pasture lot, is best for the Carnation. There is no soil that can be made artificially that is so good. A little charcoal or sand, and some old manure, may be added. Carnations grown in such soil, if well cared for, can not fail to do well.

Mr. McGahry.—Are fertilizers useful?

Mr. Mead.—Do not think artificial fertilizers are called for at all in such a soil. An occasional application of manure water will hasten the bloom, but is apt to spoil the color.

3. Is the Antarctic Forget-me-not, (Myosotidum nobile,) grown here as a house plant?

Mr. Mead.—It is, and can be purchased of our florists.

The following questions were asked by a member:

4. Do fruit trees, when they are trained, yield more and better fruit than when they are grown as standards or dwarfs?

Mr. Mead.—All trees that are properly pruned, may be called trained trees. The question probably refers to espaliers, and it may be doubted whether these in our climate, yield more or better fruit than well-grown standards. In some countries, where protection is needed, or there is a deficiency of sun, espaliers, no doubt, produce the best fruit; but there is no necessity for growing fruit on walls here.

5. Do budded trees produce their fruit sooner than grafted ones?

Mr. Mead.—It should have been stated what kinds of fruit trees are referred to. Much depends on the kind of budding and the kind of tree. In many cases a graft will produce fruit sooner than a bud.

6. Are seedling fruit trees less liable to disease and decay than budded or grafted ones?

Mr. Mead.—As a general thing, yes; but a good deal depends upon circumstances. A healthy graft worked on a healthy seedling stock will make a healthy tree, if placed in proper conditions. Have no faith in fruit trees running out any more than in the human race running out. Both are subject to similar physical laws, an observance of which is necessary to their well being. The individuals of both alike become a prey to disease and death, but the race is continued.

7. Is the Casuarina Indica (an Australian Bamboo) grown here?

Mr. Mead.—The plant is grown here, but is not easy to be had.

8. What is known here of the "Gossypium arboreum," or Perennial Tree Cotton described by Mr. Kendall?

Mr. Mead.—Very little is known of it here. We have to depend upon Mr. Kendall for most of what we know. Parties in Pennsylvania, and it may be elsewhere, are experimenting with it, but the time has been too short to have produced any reliable results. It is probable it will grow in some parts of the country.

9. Is the new English Strawberry, "Frogmore Late Pine," yet introduced here? It is said to possess unrivaled qualities.

Mr. Mead.—This is not the only Strawberry which is said to possess unrivaled qualities. Do not remember at the moment of having seen it in our catalogues. The greater portion of these foreign strawberries, though possessing great excellence in Europe, deteriorate when changed to our climate, and are unfitted for field culture. The Triomphe de Gand is one of the very few exceptions. This is an immediate cross with one of our native varieties, which will account for its success in a measure. This, Mr. Chairman, (taking up a wooden box on the table,) looks exceedingly like a flower-pot, but it is really a fruit box, for strawberries and other small fruits, and is one of the prettiest and neatest things of the kind I have seen. They are very cheap, too, the price being only two dollars a gross. It looks as if it might make a good flower pot for some things, and I purpose trying it. It seems, however, liable to one casualty, whether used as a flower pot or a fruit box: I think the bottom will be apt to fall out. This case, sent here by Mr. Eberhard, has some of the merits of the Waltonian case as respects bottom heat; but it can be described on some future evening, the time having arrived for our regular subject, "Spring Pruning." Mr. Fuller is always ready with a sharp knife to cut any body or any thing; perhaps he will tell us something about spring pruning.

Mr. Fuller.—There has been a call from strawberry growers for a basket to

sell with the fruit. This is a good one. Few English strawberries have succeeded here. Triomphe de Gand is a Belgian variety. All foreign varieties are from American varieties. These were sent wild from Virginia, and have been reproduced there. The Belgian varieties stand our climate much better.

Mr. Fuller was asked, "How do you prune a grape so as to have it grow a hundred years without increasing in size?"

Mr. Fuller.—I know where the question comes from, and the spirit in which it comes. The trunk will increase in size, but the vine will not require more room.

[Mr. Fuller then read an essay on Pruning. We have no copy of it.—Ed.]

Mr. Fuller.—It is well known that vines in Europe 18 inches high are 50 years old. They are cut down to one eye. The vines are not trained, but the branches hang over the head.

Question.—Do your remarks apply to the Isabella and Catawba?

Mr. Fuller.—No. We have not had experience enough in this country to know what we can do. Some varieties we can cut clear down; others we prune to a well-developed bud. I would leave two good buds on the Isabella. A grape vine is not worth having unless it has a going over once a-week. The best way is to train to two arms.

Mr. Cavanach.—I have a few remarks to make, and will read them. [We have no copy of these remarks.—Ed.]

At the close, Mr. McGahry said, By fall pruning, in a short time you will have no vines; the winter does its own pruning. I have pruned twenty-five vines this season in this city, and have not left one scientifically pruned. I found twelve years' bark on some, with numerous insects. Clear off all the old bark, which gives the vines a youthful appearance, and gets rid of the insects. Never get your vines pruned in the fall. Would prune now till the first week in June.

Mr. Fuller.—Both spring and fall pruning is logical. In some countries they prune altogether in the fall. The roots continue to absorb after the leaves fall. You should never prune so close in the fall, but cut again in the spring. We prune in the fall for cuttings. I would not, as a rule, prune in the fall in Brooklyn. There is hardly a grape that would not pay to lay down. Strawberries and raspberries do better by being covered in winter. A plant may lay in solid ice all winter and not be injured, if the water runs off when it melts.

After some further conversation the Society adjourned, the subject of Pruning being continued.

The Society met again March 11th, President Degrauw in the chair.

Mr. Mead congratulated the Society on the brilliant display of flowers and plants on the table. Mrs. Humphries presented a fine collection of plants and a very beautiful floral basket. Among the plants were two fine seedling Cinerarias. Mr. Chamberlain exhibited a number of his moss baskets, consisting of Peaches, Cherries, Vines, Verbenas, &c., the peaches and cherries being well furnished with fruit buds. The President exhibited fine specimens of Azalias and Hyacinths.

Mr. Chamberlain also exhibited a noble specimen of the Providence Pine, weighing seven and a half pounds. Mrs. Humphries exhibited also a Wardian case, the plants being very tastefully disposed. Mr. Eberhard exhibited a new pattern of the Waltonian case. Mr. Weir exhibited a superb lot of Camellia blooms.

The following questions were asked:

1. What is the best variety of Rose to be used as a weeper?

Mr. Mead.—I have never seen but one true weeping variety of the rose. It is in the possession of Mr. Burgess. He says it is called the Willison's Weeper, and was raised in Yorkshire. It should be worked six or seven feet high.

2. What as a pyramid?

I hardly know how to understand this question. A pillar Rose is probably meant. If so, I would select a strong growing Hybrid Perpetual.

Mr. Burgess suggested the Baronne Prevost.

Mr. Fuller.—It is not easy to select one, where there are so many.

Mr. Bridgeman.—The strong growers are the best. Weak growers would not be likely to attain sufficient height to correspond with the others. It is a very pretty method of growing Roses.

3. What is considered the best white Rose for cemetery lots?

Mr. Mead.—There are only two or three among the Hybrid Perpetuals, and hardly one pure white. Mrs. Rivers is one of the best, but difficult to get true. In a well-protected lot I would select from among the Teas and Noisettes, and cover during the winter.

4. It is stated that the seeds of some varieties of flowers, if they be kept for several years will produce blooms larger and more double than if planted the season after they ripen. If this be correct, what varieties are they?

Mr. Mead.—There are only a few, and the common Balsam or Lady Slipper is one of them. If kept a year or two it is more likely to come double than if sown when freshly gathered. I have kept Balsam seed more than ten years. How much longer it would keep I do not know.

Mr. Bridgeman.—Most flower seeds are injured by long keeping; the germs are apt to be destroyed. In paper bags exposed to the atmosphere is a better way to keep them than to put them in closed vessels. If put in bottles or tight boxes, they are sometimes likely to germinate there.

Mr. Burgess.—I received a prize for a melon grown from seed kept thirteen years in a piece of cartridge paper. It was a Cantaloupe Melon.

Mr. Bridgeman.—Mr. Thomas Hogg, who has had a large experience, as well as his father before him, says it is a mistake to seal up seeds to preserve them or send them to a distance. The best way is to pour honey over them. Seeds that could not be brought from China in any other way, have been so treated, and brought successfully.

5.—Why is it that some Rose bushes have pericarps in abundance after flowering, while others have none?

Mr. Mead.—I do not know of any rose that does not have a pericarp. It may not always swell and produce seed, but under proper conditions it will do so. Some kinds of roses set them more abundantly than others. This is determined in a great measure by the fulness of the rose, or the abundance of its petals. The circumstances of culture also have their influence.

Mr. Park.—Three quarters of our Camellias do not produce seed. I think there are roses so full they do not produce seed.

Mr. Fuller.—All double flowers are deformities and monstrosities, and not natural.

Mr. Mead.—The fullest rose we have would produce seed, if grown for a while in a poor soil; while in the rich soil, used in the green-house, it might fail to do so.

6. Has the Delaware grape been grown under glass, and with what results?

Mr. Mead.—I have known it in one or two instances to be grown under glass, and with the best results. It is always grown with the best results, in doors or out.

Mr. Fuller.—If the Delaware was grown under glass as well as out of doors, I should doubt its being a native.

[Then we should, for the same reason, have to doubt the nativity of the Isabella, Diana, and Catawba, but especially the last; for they have been for many years, and are still, grown under glass with the best results. We know of graperies that have for ten or more years past been pretty equally divided between the Black Hamburgh and the Catawba.—Ed.]

7. When is the best time to plant evergreens, and should preference be given to small trees?

Mr. Mead.—If confined to one period, I would plant in the month of August or the beginning of September. Have planted at other seasons with good success. Would give the preference to small trees; by which, I do not mean trees a foot high, but approaching my own height, which is a very good height, Mr. Chairman.

Mr. Burgess.—I should plant from the tenth to the twentieth of June. Never lost a plant from thousands.

8. Which are the best varieties of pears for city yards, for growing against the fences, or on espaliers?

Mr. Mead.—I should not select a dozen kinds for a dozen trees, but select three or four kinds, such as Dearborn's Seedling, Belle Lucrative, Seckel, &c.

Mr. Fuller.—I would plant all of one kind, the Duchesse d'Angoulême.

9. I have room for six grape vines. What kinds shall I plant to receive the best return, and at what time shall I plant them?

Mr. Mead.—A good selection would be 3 Delawares, 1 Rebecca, 1 Hartford Prolific, 1 Concord. [On further thought we would replace the Hartford by the Creveling for the early kind.—Ed.]

Mr. Fuller.—I would make up the list all of Delawares.

Mr. Mead.—They should be planted as early this spring as possible.

10. Would the fruitfulness of blackberries, raspberries, gooseberries, and currants, be increased by bending the branches down, or training them on a fence, as the grape vine or pears are frequently done?

Mr. Mead.—They are abundantly fruitful without any trouble of that kind. Currants, if at all well grown, are literally covered with their fruit. There is nothing to be gained by growing blackberries and raspberries as espaliers.

Mr. Burgess.—Last year I got rid of the acid of currants by leaving them on till they were ripe.

11. If the gooseberry were trained to a tree shape, would it prevent mildew?

Mr. Mead.—Do not think it would.

12. Is salt hay or grass the best mulch for the gooseberry? Can the large English kinds be grown here?

Mr. Mead.—Salt hay and grass are both considered good mulches, but they will neither of them prevent the mildew. The large English kinds can be grown here, but they mildew badly.

Mr. Fuller.—The best preventive is to plant the Houghton Seedling, which does not mildew.

The next question was sent from Greenport, by Mr. J. H. Jackson.

13. If not contrary to your rules, may I ask you to inquire of your society, at the next meeting, *what are the best varieties of pears to plant for market purposes*—say 1000 trees—at what distances should they be planted each way, and any information besides the members may give. No doubt there are many others who wish the same information, and some of your practical men can tell me through the reports of your meeting.

Mr. Mead.—A pretty extensive question this. I should not like to hazard my reputation by answering it impromptu.

It was passed to the next meeting.

14. Can the hardy Yuccas be easily grown from seed, and are there any varieties with red flowers?

Mr. Mead.—The Yucca can be grown from seed, but it does not vegetate very rapidly. I know of none with red flowers.

Mr. Burgess.—I have seen plenty of seedlings come up around large plants in England.

Mr. Fuller.—I raised ten thousand seedlings for a double and a red flower. I had all the varieties; none were distinct enough to propagate. There was neither a double nor a red flower.

Mr. Cavanach.—The seed will come up here. I have an example in my garden.

15. What is the botanical name of the Chinese tallow tree, and will it grow here in the open ground?

Mr. Fuller.—It is called Stillingia.

16. Can the apricot or nectarine be grown in city yards without protection? and, if so, what are the best varieties of each for that purpose?

Mr. Mead.—The Apricot and Nectarine can be grown in city yards. The Boston is one of the best, for hardiness. The Early Violet and Newington are also good.

17. Is it a generally received opinion among pomologists that fruit grown larger than its natural size, is deficient in flavor?

Mr. Mead.—There is a good deal of ingenuity shown, Mr. Chairman, in framing some of these questions. Some of them are well calculated to bring a man out. I will say in answer, that an overgrown specimen of fruit is generally considered coarse and deficient in flavor.

18. In pruning a vine trained upon an arbor, how many eyes should be left if it be pruned in the spring?

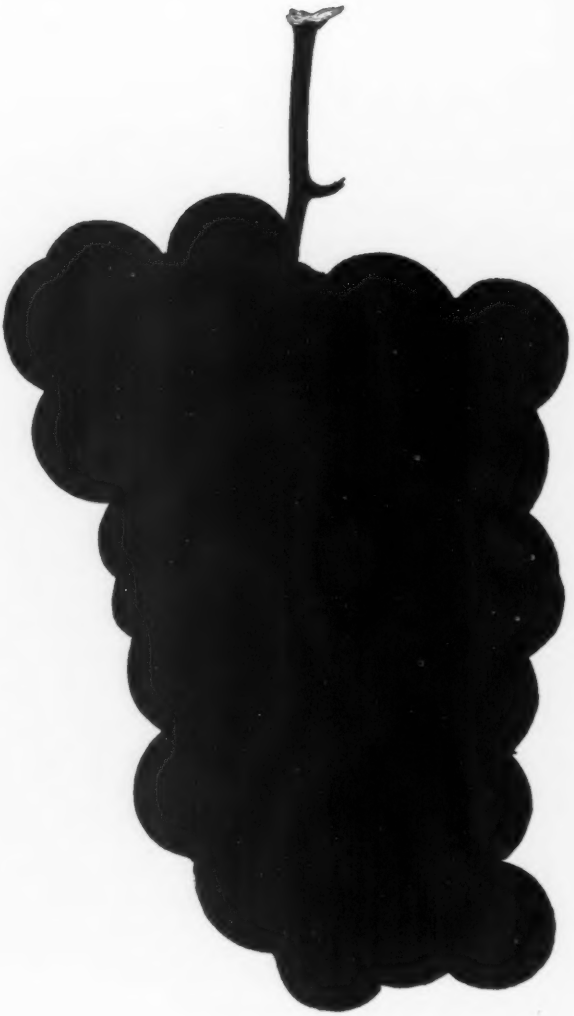
Mr. Burgess.—I recommend the person asking that question to employ a practical gardener.

Mr. Mead.—This question naturally leads us to the subject of the evening's discussion. Whether I pruned in the autumn or in the spring, I would leave at least three buds to a spur; the lower bud for the purpose of making a new cane, the middle bud to be rubbed out, and the third bud for producing the fruit. The practice is to cut down to a single bud. The reason for leaving three buds is the simple fact that the third, fourth, fifth, or sixth bud will produce larger and better fruit than the first or second. (This mode of pruning was illustrated on one of Mr. Chamberlain's vines.)

Mr. Cavanach.—I think two eyes much better. Mr. Fuller pursues this system. Pruning to three eyes will make the wood too long; the second year will raise the wood about five to six inches above the main wood.

Mr. Mead.—So far as mere appearances are concerned, it does not matter whether the spur is one or five inches long. A spur pruned vine is not a beautiful object; at best it looks like an Irishman's shillaleh. I spoke of the three eyes because it is a fact that we can get better fruit from the third or fourth eye than we can from the first or second. The spur lengthens this way no faster than it does by pruning to two eyes; and if it did, it would not be a difficult matter to produce a new spur. I should not hesitate to cut the largest vine on this island down to within a foot of the ground, for I should have the certainty of getting a multitude of shoots. Have done this repeatedly. The shoots thus produced are barren, and will bear no fruit till the second year. (He then explained how this barren wood could, by pinching in and causing a bud to break, be converted into fruitful wood the first year.)

After some further talk it was determined to omit the miscellaneous business at the next meeting, and continue the subject of Spring Pruning.



ROGERS'S HYBRID, No. 4.